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BULLETIN No. 14

U. S. DEPARTMENT OF AGRICULTURE

DIVISION OF BIOLOGICAL SURVEY

LAWS REGULATING THE TRANSPORTATION AND SALE OF GAME

BY

T. S. PALMER and H. W. OLDS

ASSISTANTS, BIOLOGICAL SURVEY

Smithsonian Institution
318
1918
National Zoological Park

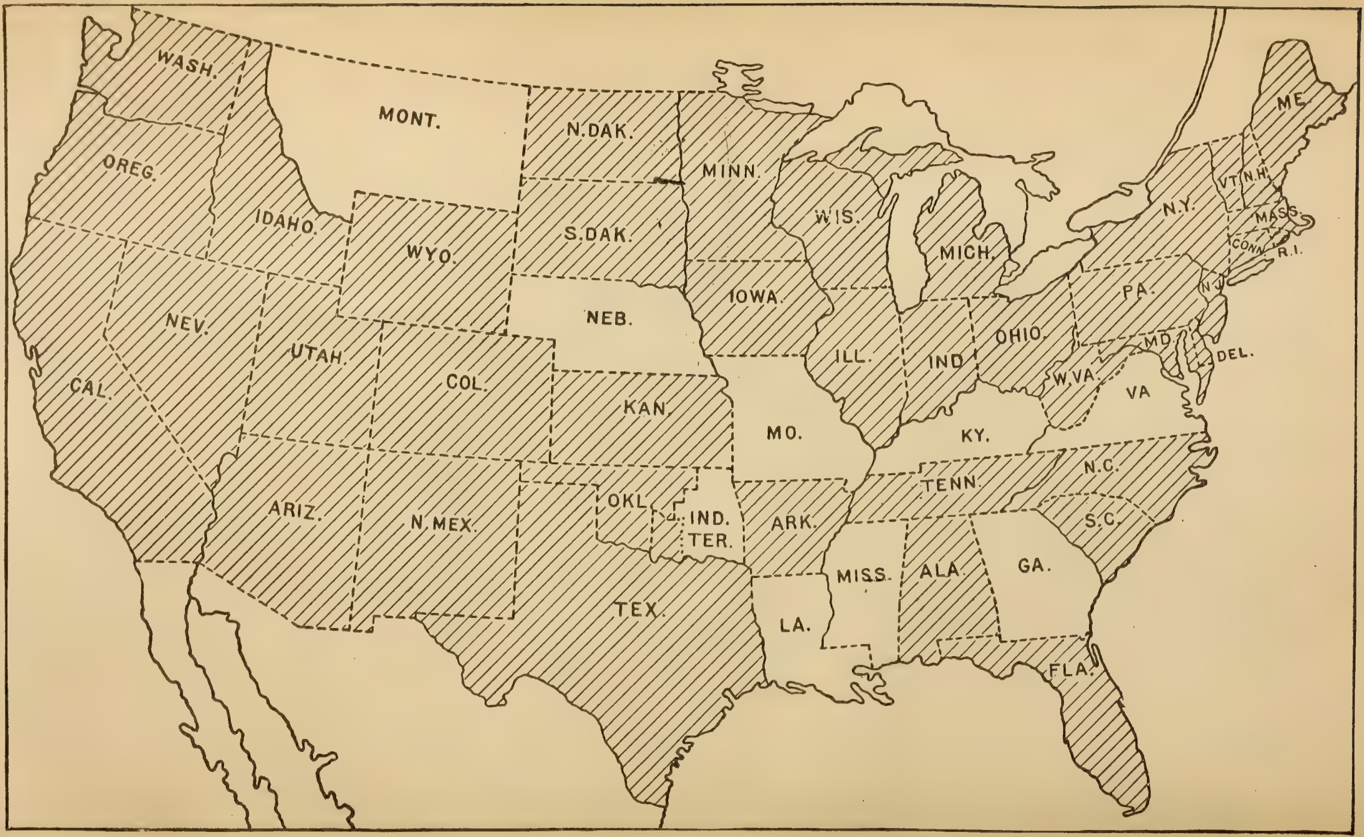
PREPARED UNDER THE DIRECTION OF

Dr. C. HART MERRIAM

CHIEF OF BIOLOGICAL SURVEY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1900

PLATE I.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MAP SHOWING STATES WHICH PROHIBIT EXPORT OF GAME.

Forty States (shaded) prohibit export of certain game (see pp. 35-39), and all of these except New Hampshire, North Dakota, and Wyoming forbid shipment of quail. Montana prohibits sale of all game taken in the State.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF BIOLOGICAL SURVEY,
Washington, D. C., November 9, 1900.

SIR: I have the honor to submit herewith, and to recommend for publication, as Bulletin No. 14 of the Biological Survey, a report on 'Laws Regulating the Transportation and Sale of Game,' by Dr. T. S. Palmer, who has been charged with the immediate supervision of matters relating to game under the Lacey Act, assisted by H. W. Olds, an assistant in this Division. The object of this report is to present in convenient form a digest of the State laws now in force which affect the trade in game. In view of the fact that the open season is at its height, and that considerable quantities of game are now being shipped to market, it is very desirable that this bulletin be published and distributed as promptly as possible.

Respectfully,

C. HART MERRIAM,
Chief, Biological Survey.

Hon. JAMES WILSON,
Secretary of Agriculture.

PREFACE.

The act of Congress approved May 25, 1900, supplements existing State laws by prohibiting the shipment from one State to another of birds killed in violation of local laws, and by subjecting birds brought into a State to the same restrictions as those prescribed for birds produced within that State. Acquaintance with local laws is, therefore, essential to intelligent observance of the requirements of the Federal law, but in the absence of a complete digest of game laws it is difficult to obtain such knowledge. A compilation entitled 'Game Laws in Brief' is published quarterly, but though an excellent guide for sportsmen, it does not include penalties or provisions relating to prosecutions, and frequently omits those regarding sale. The need of a compilation that shall be brief, yet fully covering such laws as affect the game trade, is shown by the fact that shippers, transportation companies, and game dealers sometimes find themselves in the position of inadvertently violating laws, with the provisions of which they are unfamiliar and the requirements of which they have no ready means of ascertaining. To meet this demand, a compilation has been made of such sections of the various State laws as relate to transportation and sale, and tables and diagrams have been prepared showing close seasons, species prohibited from shipment and sale, limits of bags, and regulations regarding nonresident licenses. The tables relating to seasons, shipment, and sale have already been published as Circular No. 31 of the Biological Survey.

While much care has been exercised in preparing this report, yet the difficulty of securing absolute accuracy in such a digest is very great, and some errors may have occurred. Sportsmen and others, therefore, are requested to report promptly any inaccuracies or omissions that may be detected.

T. S. Palmer.
H. W. Olds.

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LAWS REGULATING THE TRANSPORTATION AND SALE OF GAME.

I.—GENERAL DISCUSSION OF LEGISLATION REGULATING SEASONS, SHIPMENT, AND SALE.

INTRODUCTION.

The term game has been variously defined,[1] and is capable of various interpretations, but it may very properly be restricted to a few well-marked groups of mammals and birds. The game of North America is practically limited to four groups of mammals and four of birds. The game mammals are (1) ruminants and peccaries (Ungulata); (2) bears and raccoons[2] (Carnivora); (3) rabbits and squirrels (Rodentia); and (4) opossums (Marsupialia). Game birds, as defined by the American Ornithologists' Union, comprise (1) Anatidæ, commonly known as swans, geese, brant, and ducks; (2) Rallidæ, including rails, coots, mud hens, and gallinules; (3) Limicolæ, or shore birds, comprising plovers, snipe, woodcock, sandpipers, and curlew; and (4) Gallinæ, including wild turkeys, grouse, prairie chickens, pheasants, partridges, and quail. Certain mammals and birds which are sometimes classed as game should, for various reasons, be otherwise regarded. Among such mammals may be mentioned ground squirrels, muskrats, and woodchucks; among birds, cranes, wild pigeons, doves, flickers, night hawks or bull bats meadow larks, reedbirds, blackbirds, and robins. Ground squirrels, muskrats, and woodchucks are not held in high estimation for the table, nor are they usually hunted for sport. Cranes, pigeons, and doves are ordinarily considered legitimate game, but are now so rare that in most States they have been practically removed from the game list. Flickers, night hawks, meadowlarks, blackbirds, and robins are insectivorous, and although considered good eating, are far too valuable to be killed for sport or market. Reedbirds or bobolinks are regarded as pests in the South and are highly esteemed as song birds in the North; they are treated as game in only five States along the middle Atlantic coast, where they are neither particularly beneficial nor injurious. They too may therefore be removed from the category of game.

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[1] Game is defined by Bouvier's Law Dictionary as "Birds and beasts of a wild nature obtained by fowling and hunting," and by the Code of Mississippi as "all kinds of animals and birds found in the state of nature commonly so-called." Michigan, British Columbia, and New Brunswick define game birds as "any birds protected by this act." Maine declares "the term 'game birds' as used in this act shall be construed to mean the ruffed grouse or partridge, all species of the pheasant, woodcock, snipe, plover, quail, and all ducks enumerated in this act; and the term 'game animals' shall be construed to mean moose, caribou, and deer." (Acts of 1899, ch. 42, sec. 50.)

[2] These animals are seldom mentioned in game laws. As a rule, bears are accorded no protection, and bounties for their destruction are still offered in some States, but in Quebec they have a close season like other game.

In comparison with some of the continents of the Old World North America is deficient in big game. The true antelopes, which are found in such wonderful variety in Africa, are entirely unrepresented in this country, the nearest approach to them being the single species of prong horn, or so-called antelope. Wild sheep and goats, of which there are numerous species in Asia, are comparatively few in number in this country and are confined to the mountains of the West. In game birds, on the other hand, North America compares favorably with any part of the world. Upland game is represented by quail and grouse in great variety and by several species of one of the finest of all game birds—the wild turkey. Shore birds are abundant in some localities at certain seasons, and the ducks and geese which resort to our streams and coasts in winter have rendered certain feeding grounds famous the world over. When this list is increased by the addition of the finest of the Old World pheasants, several species of which have already been introduced, the variety of game birds will be unsurpassed by that of any other region of similar extent.

Improvidence and wantonness have, however, rapidly depleted the stock of game. Buffalo are gone; elk, moose, and caribou are rare, except in a few favored localities; and even deer, which are generally distributed, have been greatly reduced in numbers by unnecessary and unreasonable slaughter. Wild pigeons, like the buffalo, have been practically exterminated; the prairie chicken is no longer found in much of the country that was its native home half a century ago; wild turkeys and woodcock are almost extinct in many localities where they should be numerous; and ducks and geese, which only a few years ago were remarkably abundant in some sections, are rapidly growing scarcer. Even quail, the subject of more legislation and receiving better protection than any other kind of game, are now maintained in many places only by frequent restocking of depleted covers. This diminution in the game supply is due partly to lack of proper enforcement of game laws, partly to the pernicious practice of spring shooting, and partly to the rapid development of the trade in game in recent years.

Doubtless it would be interesting to trace the steps in the development of game legislation in this country, but it will be sufficient merely to refer to a few of the more important points. "The laws relating to game in the United States are generally, if not universally, framed with reference to protecting the animals from indiscriminate and unreasonable havoc, leaving all persons free to take game under certain restrictions as to the season of the year and the means of capture. * * * As the most effective means of enforcing such statutes, most of them prohibit all persons, including licensed dealers, under penalty, from buying or selling or even having in possession or control any game purchased within a certain period after the commencement of the close season."[1] The principle that the game belongs to the State and that its capture is a privilege, but not a right, is becoming generally recognized. It has been upheld by several of the State courts; and the laws of Colorado, Illinois, Michigan, Minnesota, Texas, and Wisconsin declare specifically that the title to game is vested in the State.

Laws fixing seasons for the killing of game date back more than a century, as exemplified by the New York statute protecting heath hens, which was passed in 1791. The necessity for regulations controlling the manner of capturing game also attracted attention at an early date, as shown by the Virginia law of 1832, which prohibited killing wild fowl with swivel guns, or while they were at rest on the water at night. More recently, restrictive measures have been adopted which require licenses from nonresidents, limit the number of birds or animals which may be killed in a day or season, and authorize the maintenance of wardens for the special purpose of enforcing game laws. Of late years, legislation has also been directed toward restricting traffic in game. Laws prohibiting export of game from the State, at first experimental, have been generally adopted since their constitutionality was established by the Supreme Court[2] in a decision rendered March 2, 1896. Progress has also been made in restricting the sale of game and the killing for market. In several States, market hunting for deer and certain game birds is absolutely prohibited at all seasons; in others, laws against the sale of certain game are in force; while in three States at least—Kansas, Idaho, and Montana—the sale of all game protected by the State law is illegal.

BIG GAME.

The big game of the United States is rapidly disappearing. As already stated, buffalo are almost extinct; elk and antelope have been killed off in many localities in which they were formerly abundant; moose, caribou, mountain sheep, and mountain goats are now found in only a few States; and deer are rare in many places where they should be common. To such an extent has this decrease proceeded that vigorous measures are now necessary to prevent the extermination of all big game. Legislation has been directed toward stopping slaughter for hides, materially shortening the seasons, limiting the number which may be killed, prohibiting sale and shipment at all seasons, and in many cases prohibiting shooting indefinitely or for a term of years.[1]

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[1] Bouvier's Law Dictionary.

[2] Geer *v.* State of Conn., 161 U. S., 519.

In the case of deer, fawns are generally protected; in Arizona and California does, and in Vermont deer without horns are protected at all times. In five States the open season has been reduced to thirty days or less—in Pennsylvania, thirty; Michigan, twenty-three; Minnesota and Wisconsin, twenty; and Vermont, ten; and in seven others it has been withdrawn either temporarily or permanently. In New Jersey, and in four counties of New York and two of Wisconsin, deer are protected at all seasons until 1902; in Connecticut, Massachusetts, and four counties of Maine, until 1903; in Illinois, until 1904; in Rhode Island, until 1905; in Garrett County, Md., until 1906; and in Iowa, Oklahoma, and one county of Tennessee, indefinitely.

The killing of other big game has been still more restricted. Elk are protected in New Mexico, until 1904; in Oregon, until 1910; in Arizona, California, Iowa, New York, North Dakota, and Utah, indefinitely. Close seasons for moose continue in Wyoming until 1902; in Idaho, until 1904; and in New York, North Dakota, and Vermont, indefinitely. In Maine the killing of cow or calf moose, and in Minnesota the killing of moose without antlers at any time is prohibited. Caribou are protected in Idaho until 1904; in Maine, until 1905; and in New York, North Dakota, and Vermont, without limit. Killing unantlered caribou in Minnesota is illegal at any season. For antelope, the term of protection in Texas extends to 1902; and in Arizona (females only), California, New York, North Dakota, Oklahoma, and Utah it is unlimited. Protection at all seasons and without limit is given mountain sheep in Arizona, California, Colorado, Montana, North Dakota, and Utah; mountain goats, in Arizona and New Mexico; and bison, in Colorado, Montana, North Dakota, and Utah.

Only fifteen States and Territories permit the killing of big game other than deer. All but five of these limit the number that may be killed, and have cut down the open seasons until the maximum is only four and one-half months and the minimum but five days. Export is practically prohibited in all States where such game occurs except Minnesota, Montana, Nebraska, and New Hampshire, and in these States restrictions, in some cases little short of actual prohibition, surround its shipment. The States in which big-game hunting is still permitted, the open seasons, and limitations as to numbers, are shown in the following table:

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[1] Similar laws are in force in Canada, but are not considered in the following discussion. It may be mentioned, however, that deer are protected in Nova Scotia until 1904; elk in Ontario indefinitely, in Nova Scotia until 1904, and in Newfoundland until 1906; moose in Ontario until 1903, and in Newfoundland until 1906; and caribou in Ontario until 1903.

Open seasons for big game (except deer).

[For open seasons for deer, see pp. 31-32.]

State.	Species.	Open season.	Length of season, in days.	Number that may be killed in one year.
Arizona	Antelope (male)	Aug. 1-Dec. 15	136	....
Colorado	Elk with horns	Oct. 25-Nov. 6	12	1
	Antelope with horns	Aug. 15-Nov. 6	83	2
Idaho	Antelope, sheep, goat	Sept. 1-Jan. 1	122	[1]4
	Elk	Sept. 1-Dec. 1	91	2
Maine	Moose	Oct. 15-Dec. 1	47	1
Minnesota	Moose, caribou (both antlered)	Nov. 5-10	5	[2]1
Montana	Elk, moose	Sept. 15-Nov. 15	61	[1]2
	Antelope, goat	Sept. 1-Jan. 1	122	[1]6
Nebraska	Elk, antelope	Nov. 1-Jan. 1	61	....
Nevada	Elk, caribou, antelope, sheep, goat	Sept. 1-Jan. 1	122	....
New Hampshire	Moose, caribou	Sept. 15-Dec. 1	77	....
New Mexico	Antelope, sheep (both with horns)	Oct. 1-Jan. 1 Sept. 1-Dec. 1	92 91	[3]1
Oregon	Moose, sheep	July 15-Nov. 1	109	....
Pennsylvania	Elk	Nov. 1-Dec. 1	30	....
South Dakota	Elk, antelope, buffalo, sheep	Oct. 15-Jan. 1	78	....
Washington	Elk, moose, caribou, antelope, sheep, goat.	Sept. 1-Nov. 1	61	[2]2
Wyoming	Elk	Sept. 1-Dec. 1	91	2
	Antelope	Sept. 1-Dec. 1	91	3
	Sheep, goat	Sept. 1-Dec. 1	91	1

[1] Altogether. [2] Of each. [3] At one time.

GAME BIRDS PROTECTED FOR A TERM OF YEARS.

Two conditions are generally recognized as justifying the complete withdrawal of open seasons for several years: (1) When game has been killed off to such an extent that a period of recuperation is necessary to save it from extermination; and (2) when game is introduced into a new locality and time is required for it to become established amid new surroundings. The periods of absolute protection usually vary from two to ten years, and are renewed when necessary. The only protection of the kind accorded native game birds is as follows: Washington and Wisconsin protect quail until 1901; Arizona protects bobwhite and prairie chickens until 1902; Oregon protects wild turkeys until 1904; North Dakota protects quail and wild swans until 1905; indefinite protection is accorded quail, partridge, and ptarmigan in Colorado; pheasants in Kansas; pinnated grouse in Massachusetts; quail in Montana; grouse in Oklahoma; quail in Oregon (east of the Cascades); pinnated grouse and introduced game birds in Utah; and wild swans in Wyoming. Several counties in Maryland and Tennessee also extend protection, either for a term or indefinitely, to various birds, such as quail, grouse, pheasants, wild turkey, woodcock, and snipe.

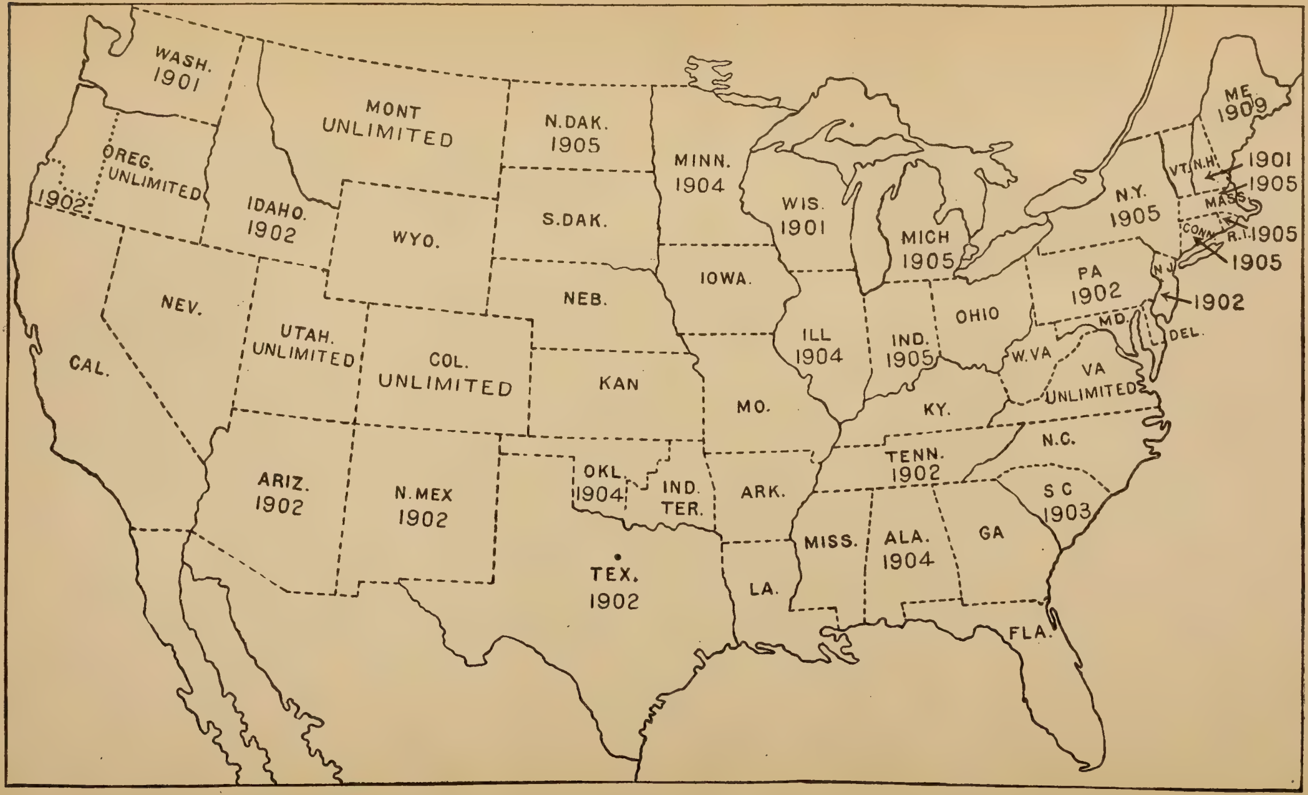
In Arkansas, Indiana, Iowa, Kansas, Massachusetts, Michigan, Nebraska, New York, Rhode Island, Vermont, West Virginia, and Wisconsin doves are given the same protection at all seasons as that accorded nongame birds.

Pheasants and other foreign game birds are almost always given a close season of from three to ten years after introduction. They are protected in twenty-eight States, as shown by the accompanying map (See Pl. II). In Oregon this protection is confined to the region east of the Cascades and some of the counties in the southwestern part of the State, but does not cover the Willamette Valley, where the period has already expired. Protection without limit is in force in Colorado, Montana, eastern Oregon, Utah, and some of the counties of Virginia. The periods expire in 1901 in New Hampshire, Washington, and Wisconsin; in 1902 in Arizona, Idaho, New Jersey, New Mexico, Pennsylvania, Tennessee, and Texas; in 1903 in South Carolina; in 1904 in Alabama, Illinois, Minnesota, and Oklahoma; in 1905 in Connecticut, Indiana, Massachusetts, Michigan, New York, North Dakota, and Rhode Island; and in 1909 in Maine.

CLOSE SEASONS.

No question in game protection is more important than that of the seasons during which birds and animals shall be protected, yet, strange to say, there is none in which State game laws show greater diversity and none in which they are more subject to change. Even the laws of adjoining States show little uniformity in this respect, and in some States changes in game seasons are made at nearly every legislative session. This lack of uniformity often defeats the purpose of provisions intended to allow game opportunity to recuperate. It also introduces needless confusion and makes compliance with the provisions of the Federal law difficult for shippers and game dealers, who must consider the open seasons in both the State in which their game is killed and in that to which it is shipped. Further confusion results from diversity in defining the seasons. In some laws the open seasons, in others the closed, are stated, and in these statements may be found all possible varieties of inclusion and exclusion of the dates named. Again, exceptions are often grafted upon exceptions to such a degree as to obscure the intent of the law.

An attempt is here made to bring together in one table all the close seasons for game prescribed by the various States and by the Provinces of Canada. For the sake of simplicity a uniform method is used both in the arrangement of species and statement of seasons. In each case big game is first considered, then follow squirrels and rabbits; then upland game birds, such as quail, grouse, pheasants, turkeys, and doves; then shore birds; and finally water fowl, such as ducks, geese, and swans. In the statement of seasons only close seasons have been given, and in stating these the plan of the Vermont law, to include the *first* date but not the last, has been followed consistently. The Vermont scheme has the advantage of showing readily both the open and close seasons, since either may be obtained by reading the other backward. Thus, when the close season is stated as


WASH. 1901
OREG. UNLIMITED
1902
CAL.
NEV.
IDAHO. 1902
MONT UNLIMITED
WYO.
UTAH. UNLIMITED
COL. UNLIMITED
ARIZ. 1902
N.MEX 1902
N.DAK. 1905
S.DAK.
NEB.
KAN
OKL. 1904
IND. TER.
TEX. 1902
MINN. 1904
IOWA.
MO.
ARK.
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WIS. 1901
ILL 1904
MICH 1905
IND. 1905
OHIO
KY.
TENN. 1902
MISS.
ALA. 1904
GA
FLA.
S C 1903
N.C.
W.VA
VA UNLIMITED
MD.
DEL.
N.J.
1902
PA 1902
N.Y. 1905
VT.
N.H.
MASS.
CONN.
R.I.
ME. 1909
1901
1905
1905
1905

MAP SHOWING STATES WHICH PROTECT PHEASANTS AND OTHER INTRODUCED BIRDS FOR A TERM OF YEARS.

Dates indicate expiration of close seasons.

December 1–October 1, the open season begins October 1 and ends December 1 (it being understood in each case that the last date is excluded). In some States certain days of the week constitute additional close seasons throughout the term in which killing is permitted. Sundays constitute a close season for all game in Maine, Massachusetts, New York, New Jersey, Pennsylvania, Delaware, Allegany County, Md., the District of Columbia, North Carolina, Alabama, Ohio, the Indian Territory, and in Ontario, New Brunswick, and Newfoundland. Mondays also constitute a close season for wild ducks in Ohio; Mondays, Wednesdays, and Fridays for rail, reedbirds, and red-winged blackbirds in the District of Columbia, and for wild fowl in Carteret County, N. C., and Wednesdays and Saturdays for wild fowl in Currituck County, N. C. Similar exceptions are made for wild fowl in the Maryland laws for Anne Arundel, Cecil, Dorchester, and Harford counties.

These special exceptions are not noticed in the table here given; but apart from this, and with the further exception of the county laws of Alabama, Mississippi, and Virginia, of which no recent compilation is available, the table may be regarded as a complete résumé of the regulations now in force. It is based primarily on the summary contained in 'Game Laws in Brief,' issued by the Forest and Stream Publishing Company, and has been corrected to December 1, 1900. In its preparation, the laws passed during the present year by Iowa, Louisiana, Maryland, Massachusetts, New Jersey, New York, Rhode Island, and South Carolina have been consulted. The section relating to Maryland county laws has been taken from the synopsis prepared by the Maryland Game and Fish Protective Association, and has been corrected by Mr. Frank C. Kirkwood, secretary of the association. That for North Carolina is based on the synopsis of the game laws published by Mr. T. K. Bruner, secretary of the State Board of Agriculture, in the Bulletin of the North Carolina Board of Agriculture for October, 1900. The one relating to Tennessee county laws has been compiled directly from the code of 1896 and the session laws of 1897 and 1899. Finally, the section covering the quail laws of Virginia has been prepared from data furnished by Mr. Franklin Stearns, chief warden of the Virginia division of the League of American Sportsmen.

The difficulty of securing absolute accuracy in a table of this kind is very great, and the absence in the laws of many States of express legislation as to the inclusion or exclusion of the dates beginning and ending the seasons makes exactness in this particular a matter of doubt. Sportsmen and others are therefore requested to examine the table and to report promptly any inaccuracies which may be found, so that future editions may be made as correct as possible.

Close seasons.

(See also table at end of bulletin.)

[The close seasons include the first date, but not the last. To find the open seasons, read the dates backward.[1] No close season is prescribed by State laws for any game not mentioned in the list. Seasons which apply only to special counties are given in the middle column.]

States.	Kinds of game.	Close seasons.
Alabama (1899.)	Deer	Jan. 1–Sept. 1.
	Squirrel (black, gray, or fox)	Feb. 2–July 1.
	Quail, partridge, grouse, prairie chicken, pheasant, wild turkey, woodcock.	Mar. 2–Nov. 15.
	Dove (59 counties excepted from operation of State law, but numerous county laws in force.)	Mar. 1–Aug. 1.[2]
	Pheasant (Chinese, English, Mongolian), 5 years	Until Feb. 8, 1904.
Arizona (1897.)	Male deer, male antelope	Dec. 15–Aug. 1.
	Female deer, fawn, female antelope, elk, mountain sheep, mountain goat.	At all times.
	Quail, grouse, wild turkey, snipe, rail	Mar. 1–Oct. 15.
	Bobwhite, prairie chicken, pheasant, 5 years	Until Mar. 16, 1902.
	Dove	Mar. 1–June 1.
	Duck, goose, brant	Apr. 1–Oct. 1.
Arkansas	Deer	Feb. 1–Aug. 1.
	Quail or Virginia partridge	Mar. 1–Oct. 1.
	Pinnated grouse, prairie chicken	Feb. 1–Sept. 1.
	Wild turkey	May 1–Sept. 1.
	Dove	At all times.
California (1897.)	Male deer	Oct. 15–July 15.
	Female deer, fawn, elk, antelope, mountain sheep	At all times.
	Valley quail, bobwhite, partridge, rail, wild duck	Mar. 1–Oct. 1.
	Mountain quail, grouse	Feb. 15–Sept. 1.
	Dove	Feb. 15–July 15.
Colorado (1899.)	Deer and antelope with horns	Nov. 6–Aug. 15.
	Elk with horns	Nov. 6–Oct. 25.
	Bison or buffalo, mountain sheep	At all times.
	Quail, pheasant, partridge, ptarmigan	At all times.
	Grouse, prairie chicken, sage chicken, wild turkey	Nov. 1–Aug. 15.
	Dove, wild pigeon	Oct. 1–July 15.
	Snipe, curlew, crane, duck, goose, brant, swan, waterfowl (see exception).	Apr. 16–Sept. 1.
	Exception: Altitudes above 7,000 feet	Apr. 16–Sept. 15.
Connecticut	Deer, 10 years	Until Oct. 1, 1903.
	Gray squirrel	Dec. 1–Oct. 1.
	Rabbit	Dec. 15–Oct. 15.
	Quail, ruffed grouse, woodcock	Dec. 1–Oct. 1.
	Pheasant (Chinese or Mongolian)	Until 1905.
	Sora or rail (see exceptions)	Jan. 1–Sept. 1.
	Exceptions: New Haven, Fairfield, Litchfield counties	Jan. 1–Aug. 20.
	Duck, goose, brant	May 1–Sept. 1.
Delaware (1895.)	Rabbit	Jan. 1–Nov. 15.
	Quail, partridge, pheasant	Jan. 1–Nov. 15.
	Reedbird, ortolan or rail	Feb. 1–Sept. 1.
	Wild duck (except summer or wood duck), wild goose, brant, swan.	Apr. 15–Oct. 1.
District of Columbia. (1899.)	Deer meat (sale or possession prohibited)	Jan. 1–Sept. 1.
	Rabbit (except English rabbit), squirrel	Feb. 1–Nov. 1.
	Quail or partridge	Feb. 1–Nov. 1.
	Ruffed grouse or pheasant (except English or other foreign pheasants raised in inclosures), wild turkey.	Dec. 26–Nov. 1.
	Prairie chicken or pinnated grouse	Feb. 1–Sept. 1.
	Woodcock	Jan. 15–July 15.
	Snipe, plover, wild duck, goose, brant	May 1–Sept. 1.
	Reed bird, marsh blackbird, water rail or ortolan	Feb. 1–Aug. 20.[3]
Florida (1899.)	Deer	Feb. 1–Oct. 1.
	Quail or partridge, wild turkey	Mar. 1–Nov. 1.
	Wild duck	Apr. 1–Oct. 1.
Georgia	Deer	Jan. 1–Sept. 1.
	Quail, partridge, pheasant, wild turkey	Mar. 15–Nov. 1.
	Dove	Mar. 15–Aug. 15.
Idaho (1899.)	Deer, antelope, mountain sheep, mountain goat	Jan. 1–Sept. 1.
	Elk	Dec. 1–Sept. 1.
	Moose, caribou, 5 years	Until 1904.
	Quail	Dec. 1–Nov. 1.
	Partridge, grouse, prairie chicken, sage hen or fool hen, pheasant.	Dec. 1–Aug, 15.
	Mongolian pheasants, 3 years	Until 1902.
	Wild duck, goose, swan	Mar. 1–Aug. 15.
Illinois (1899.)	Deer, 5 years	Until Apr, 13, 1904.
	Squirrel (gray, red, fox, or black)	Dec. 15–Sept. 1.
	Quail	Dec. 20–Nov. 1.
	Ruffed grouse, pheasant or partridge, prairie chicken, pinnated grouse.	Oct. 1–Aug. 31.

[1] Except in the case of double dates, as in close seasons for woodcock in Maryland, New Jersey, and Pennsylvania, and for ducks in Ohio and Utah.

[2] This seems to be the intent of the law, but the line has evidently been transposed in printing. See Bull. No. 12, Biol. Survey, p. 56.

[3] Also Mondays, Wednesdays, Fridays, and Sundays during the remainder of the year.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Illinois (1899.)	Wild turkey	Jan. 15–Sept. 1.
	Pheasants (copper or Soemmering, English, golden, green Japanese, Mongolian, ringneck, silver, tragopan), partridge (black India, cacubis, chucker,) sand grouse, 5 years.	Until Apr. 13, 1904.
	Mourning dove, woodcock	Dec. 1–Sept. 1.
	Golden, upland, yellow-legged, or other plover, jack-snipe, Wilson's snipe, sand or other snipe.	Apr. 25–Sept. 1.
	Rail, duck, goose, brant, or other water fowl	Apr. 15–Sept. 1.
	Sale of game imported from other States	Feb. 1–Oct. 1.
Indiana [1] (1881.)	Deer	Jan. 1–Oct. 1.
	Squirrel (1889)	Dec. 20–June 1.
	Quail, pheasant	Jan. 1–Nov. 10.
	Prairie chicken	Feb. 1–Sept. 1.
	Pheasants (copper or Soemmering, golden, green Japanese, ringneck, Mongolian, silver, tragopan).	Until 1905.
	Wild turkey	Feb. 1–Nov. 1.
	Dove	At all times.
	Woodcock	Jan. 1–July 1.
	Wild duck	Apr. 15–Sept. 1.
Iowa (1897.)	Deer, elk, goat	At all times.
	Squirrel (gray, timber, or fox)	Jan. 1–June 1.
	Quail, ruffed grouse or pheasant, wild turkey	Jan. 1–Nov. 1.
	Pinnated grouse or prairie chicken	Dec. 1–Sept. 1.
	Turtle dove	At all times.
	Woodcock	Jan. 1–July 10.
	Wild duck, goose, brant	Apr. 15–Sept. 1.
Kansas (1897.)	Quail, grouse, prairie chicken	Dec. 1–Oct. 1.
	Pheasant, dove	At all times.
Kentucky (1894.)	Deer	Mar. 1–Sept. 1.
	Squirrel (black, gray, or fox)	Feb. 1–June 15.
	Quail, partridge, pheasant	Jan. 1–Nov. 15.
	Wild turkey	Feb. 1–Sept. 1.
	Dove	Feb. 1–Aug. 1.
	Woodcock	Feb. 1–June 20.
	Wood duck, teal, or other wild duck, goose	Apr. 1–Aug. 15.
Louisiana (1900.)	Deer	Feb. 15–Sept. 15.
	Quail, partridge, pheasant, dove	Mar. 1–Oct. 1.
	Wild turkey	May 1–Oct. 1.
	Wood duck, blue-winged teal	May 1–Aug. 1.
	Other ducks	Apr. 1–Sept. 1.
Maine (1899.)	Deer in Knox, Lincoln, and Waldo counties (except month of October); in Kennebec County (Dec. 1–Oct. 1); in Androscoggin, Cumberland, Sagadahoc, and York counties (at all times to Oct. 1, 1903.)	
	Deer in all other counties [2]	Dec. 15–Oct. 1.
	Bull moose (cow or calf protected at all times)	Dec. 1–Oct. 15.
	Caribou	Until Oct. 15, 1905.
	Quail	Dec. 1–Oct. 1.
	Ruffed grouse or partridge, woodcock	Dec. 1–Sept. 15.
	Pheasant (except ruffed grouse), black game, capercailzie or cock of the woods, 10 years	Until 1909.
	Plover, snipe, sandpipers	May 1–Aug. 1.
	Wood duck, dusky or black duck, teal, gray duck	May 1–Sept. 1.
Maryland [3] (1898–1900.)	Deer, only in the following counties:	
	Allegany .... Jan. 1–Aug. 1	
	Garrett .... Until Sept. 30, 1906	
	Washington .... Jan. 15–Nov. 1	
	Squirrel (see exceptions)	Dec. 1–Sept. 1.
	Exceptions:	
	Allegany, Garrett (State law) [3] .... Unprotected	
	Caroline .... Dec. 25–Nov. 15	
	Frederick (gray or fox squirrel) . Nov. 1–June 15	
	Howard .... Oct. 1–May 1	
	Kent .... At all times	
	Montgomery (gray squirrel) .... Dec. 15–Aug. 1	
	Washington ... Dec. 1–June 1, and July 1–Sept. 15	
	Wicomico .... Feb. 15–Sept. 1	
	Rabbit:	
	Baltimore, Baltimore City (sale), Calvert, Dorchester, Howard, Kent, Prince George (State law) .... Dec. 25–Nov. 1	
	Allegany .... Jan. 1–Oct. 15	
	Anne Arundel, Caroline, Queen Anne, Dec. 25–Nov. 15	

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[1] Close seasons for sale of game are different in the following cases: Quail, pheasant, Dec. 20–Oct. 15; wild duck, Apr. 13–Sept. 1.

[2] In Aroostook, Franklin, Hancock, Oxford, Penobscot, Piscataquis, Somerset, and Washington counties a person may kill one deer in September for his own consumption as food in the locality in which taken.

[3] The term 'State law' is used to indicate the seasons fixed by the public general law of 1898 in distinction from the special county laws. The seasons which apply to the whole State or a majority of the counties are placed in the third column; those relating only to special counties in the middle column.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Maryland (1898-1900.)	Rabbit—Continued.	
	Carroll Dec. 25-Nov. 10	
	Cecil Jan. 10-Nov. 1	
	Charles Jan. 15-Oct. 15	
	Frederick, Harford Dec. 15-Nov. 15	
	Garrett (State law) Feb. 1-Nov. 1	
	Montgomery Dec. 20-Nov. 1	
	St. Mary Jan. 15-Sept. 1	
	Somerset Jan. 1-Nov. 10	
	Talbot Jan. 1-Nov. 1	
	Washington Dec. 25-Oct. 20	
	Wicomico Jan. 15-Nov. 1	
	Worcester Jan. 15-Nov. 15	
	Quail (or partridge):	
	Baltimore, Baltimore City (sale), Charles, Dorchester, Howard, Kent, Prince George, St. Mary (State law) Dec. 25-Nov. 1	
	Allegany Jan. 1-Oct. 15	
	Anne Arundel, Caroline, Queen Anne, Dec. 25-Nov. 15	
	Calvert Jan. 11-Nov. 1	
	Carroll Dec. 24-Nov. 10	
	Cecil Jan. 10-Nov. 1	
	Frederick Until Nov. 15, 1902[1]	
	Garrett Dec. 1-Nov. 1	
	Harford Dec. 15-Nov. 15	
	Montgomery Dec. 20-Nov. 1	
	Somerset Jan. 20-Nov. 20	
	Talbot Jan. 1-Nov. 1	
	Washington Dec. 25-Oct. 20	
	Wicomico, Worcester Jan. 15-Nov. 15	
	Ruffed grouse (or pheasant):	
	Baltimore, Calvert, Caroline, Charles, Howard, Kent, Prince George, Talbot (State law), Dec. 25-Nov. 1	
	Allegany, Montgomery Jan. 1-Sept. 1	
	Anne Arundel Dec. 25-Nov. 15	
	Baltimore City, sale (State law) Dec. 25-Oct. 1	
	Carroll, Queen Anne, St. Mary Dec. 25-Nov. 10	
	Cecil Feb. 1-Sept. 5	
	Dorchester, Wicomico, Worcester (State law), Feb. 1-Nov. 10	
	Frederick Until Nov. 15, 1902[1]	
	Garrett Dec. 1-Nov. 1	
	Harford Dec. 15-Nov. 15	
	Somerset Until Nov. 10, 1903	
	Washington Dec, 25-Aug. 12	
	English pheasant, Mongolian pheasant (see exceptions)	Dec. 25-Nov. 1.
	Exceptions:	
	Dorchester, Somerset, Wicomico, Worcester (State law) Feb. 1-Nov. 10	
	Garrett Dec. 1-Nov. 1[2]	
	Wild turkey:	
	Baltimore, Baltimore City (sale), Calvert, Caroline, Charles, Frederick, Howard, Prince George, Talbot (State law) Dec. 25-Nov. 1	
	Allegany Jan. 1-Oct. 15	
	Dorchester, Somerset, Wicomico, Worcester[3] (State law) Feb. 1-Nov. 10	
	Garrett Dec. 1-Nov. 1	
	Kent At all times	
	Montgomery Feb. 1-Nov. 1	
	Washington Jan. 15-Nov. 1	
	Anne Arundel, Carroll, Cecil, Harford, Queen Anne, St. Mary Unprotected	
	Dove (see exceptions)	Dec. 25-Aug. 15.
	Exceptions:	
	Carroll, Frederick, Wicomico, protected at all times.	
	Kent Dec. 25-Aug. 1	
	Somerset Jan. 1-Aug. 15	
	Washington Dec. 25-Aug. 12	
	Wild pigeon, Kent County only Dec. 24-Aug. 1	

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[1] Ch. 550, acts 1900; but see ch. 587, acts 1900, which permits killing of pheasants and partridges between November 15 and December 15.

[2] According to an act passed in 1900 prohibiting the shooting of 'any pheasant' during stated season. If the term quoted applies only to ruffed grouse, the closed season for imported pheasants is Jan. 1-Nov. 1, as fixed by the general State law of 1898.

[3] It is not clear whether the intent of the law is to protect the wild turkey in these counties for this season or to leave it unprotected.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Maryland (1898-1900.)	Woodcock:	
	Baltimore, Baltimore City (sale), Calvert, Frederick, Howard (State law), Dec. 25-July 1 and Aug. 1-Nov. 1	
	Allegany, Montgomery ... Jan. 1-July 1	
	Anne Arundel ... Dec. 25-Nov. 15	
	Caroline ... Feb. 1-July 5	
	Carroll ... Dec. 24-July 15	
	Cecil ... Jan. 1-June 10	
	Charles ... Feb. 24-July 5	
	Dorchester ... Jan. 15-July 1	
	Garrett ... Dec. 1-Nov. 1	
	Harford ... Aug. 10-June 10	
	Kent ... Dec. 25-Nov. 1	
	Prince George, Dec. 25-June 15 and Sept. 1-Nov. 1	
	Queen Anne ... Feb. 1-July 5	
	St. Mary ... Feb. 24-July 5	
	Somerset ... Jan. 1-June 15	
	Talbot ... Jan. 1-July 5	
	Washington ... Dec. 25-July 12	
	Wicomico ... Feb. 1-June 15	
	Worcester ... Until July 10, 1902	
	Plover (see exceptions)	May 1-Aug. 15.
	Exceptions:	
	Carroll ... May 1-Sept. 1	
	Kent ... Dec. 25-Aug. 1	
	Wicomico ... Jan. 15-Nov. 15	
	Worcester ... Unprotected.	
	Snipe (see exceptions)	May 1-Aug. 15.
	Exceptions:	
	Carroll ... May 1-Sept. 1	
	Kent ... June 1-Mar. 15	
	Wicomico ('sandpiper') ... Jan. 15-Nov. 15	
	Worcester ... Unprotected.	
	Sora, water rail, or ortolan (see exceptions)	Nov. 1-Sept. 1.
	Exceptions:	
	Caroline ... Jan. 1-Sept. 20	
	Cecil ... Feb. 1-Sept. 5	
	Harford ... Dec. 15-Sept. 1	
	Prince George (on marshes of Patapsco, Potomac, or Patuxent bordering on Prince George or Anne Arundel counties) ... Nov. 1-Sept. 5	
	Talbot ... Jan. 1-Sept. 10	
	Reedbird (see exceptions)	Nov. 1-Sept. 1.
	Exceptions:	
	Cecil ... Feb. 1-Sept. 5	
	Harford ... Dec. 15-Sept. 1	
	Wicomico ('bobolink') ... At all times.	
	Duck, goose, brant, swan, and other wild fowl (see exceptions).	Apr. 10-Nov. 1.
	Exceptions:	
	Anne Arundel ('wild fowl' on Magothy, South, and Severn rivers ... May 1-Oct. 1	
	Caroline (duck) ... Apr. 1-Sept. 20[1]	
	Cecil, Harford ... Special local provisions[1]	
	Charles ('acorn or genuine duck') (State law), Apr. 10-Oct. 1[1]	
	Dorchester ... Special local provisions[1]	
	Somerset (duck, except wood duck) ... Apr. 1-Oct 1	
	Wood or summer duck ... Jan. 1-Sept. 1	
	Goose ... Apr. 1-Nov. 1[1]	
	Talbot (wild fowl, except summer duck), on Great Choptank River ... May 1-Oct 10	
	Summer duck ... Jan. 1-Sept. 10[1]	
	Wicomico (wood or summer duck) ... Jan. 1-Sept. 10[1]	
	Worcester (wood or summer duck) ... Mar 1-Sept. 1[1]	
Massachusetts[2] (1886-1900.)	Deer, 5 years	Until Nov. 1, 1903.
	Gray squirrel, hare, rabbit (except on Cape Ann)	Mar. 1-Sept. 15.
	Quail,[3] ruffed grouse or partridge, woodcock (except on Cape Ann).	Dec. 1-Oct. 1.
	Pinnated grouse, dove	At all times.
	Wild or passenger pigeon (except on Cape Ann)	May 1-Oct. 1.
	Pheasants (English, golden, Mongolian), 5 years	Until 1905.
	Plover, snipe, sandpiper, rail, or any 'shore,' 'marsh,' or 'beach' birds.	May 1-July 15.
	Wood or summer duck, black duck, teal	Mar. 1-Sept. 1.
	Other ducks	May 20-Sept. 1.

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[1] Otherwise as stated in State law.

[2] Gray squirrels, chipmunks, rabbits, and all land birds except English sparrows protected at all times until 1902 on Cape Ann.

[3] Imported quail may be sold by dealers, Dec. 1-May 1. Pinnated grouse, wild pigeons, shore birds, or ducks may be bought or sold by dealers at any season if such birds were not killed in Massachusetts contrary to law.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Michigan (1897-1899.)	Deer[1] (except fawn in spotted coat, protected at all times).	Dec. 1-Nov. 8.
	Squirrel (black, fox, or gray)	Jan. 1-Oct. 1.
	Quail (colin or prairie pheasant), ruffed grouse (partridge or pheasant, except on Upper Peninsula), spruce hen.	Dec. 1-Oct. 20.
	Partridge (Upper Peninsula) Dec. 1-Oct. 1.	
	Dove	At all times.
	Pheasants (English or Mongolian), wild turkey, wild pigeon.	Until 1905.
	Plover, woodcock, snipe (except jacksnipe)	Dec. 1-Oct. 20.
	Jacksnipe, bluebill, canvasback, widgeon, pintail, whistler, spoonbill, butterball, sawbill duck, wild goose (except in Upper Peninsula).	May 1-Sept. 1.
	Wild duck, brant, or other waterfowl (except in Upper Peninsula, and except those above mentioned).	Feb. 1-Sept. 1.
	Wild duck, goose, brant, or other waterfowl (Upper Peninsula) Jan. 16-Sept. 1.	
Minnesota[2] (1899.)	Deer (except first 20 days in November)	Nov. 21-Nov. 1.
	Moose and caribou with antlers (except 5 days, Nov. 5-10).	Nov. 10-Nov. 5.
	Moose and caribou without antlers	At all times.
	Quail, partridge, ruffed grouse (pheasant)	Dec. 1-Oct. 1.
	Sharp-tailed or white-breasted grouse, pinnated grouse or prairie chicken, turtle dove, snipe.	Nov. 1-Sept. 1.
	Pheasants (Chinese, English, Mongolian), 5 years	Until Sept. 1, 1904.
	Upland plover, woodcock	Oct. 31-July 4.
	Wild duck, goose, brant, or any aquatic fowl	Jan. 1-Sept. 1.
Mississippi[3] (1892.)	Deer	Mar. 1-Sept. 15.
	Quail or partridge, wild turkey	May 1-Oct. 1.
	Turtle or mourning dove, starling (field lark)	Mar. 1-Sept. 15.
Missouri (1895.)	Deer (under 1 year of age protected at all times)	Jan. 1-Oct. 1.
	Quail (Virginia partridge), ruffed grouse (pheasant or partridge), pinnated grouse (prairie chicken), wild turkey.	Jan. 1-Nov. 1.
	Turtle dove, meadow lark, plover, woodcock	Jan. 1-Aug. 1.
	Wild duck	Apr. 1-Oct. 1.
Montana (1898.)	Deer, antelope, mountain goat	Jan. 1-Sept. 1.
	Moose, elk	Nov. 15-Sept. 15.
	Bison or buffalo, mountain sheep	At all times.
	Grouse, prairie chicken, fool hen or sage hen, pheasant or partridge.	Dec. 15-Aug. 15.
	Quail, Chinese pheasants	At all times.
	Wild duck, goose, brant, swan	May 1-Sept. 1.
Nebraska	Deer, elk, antelope	Jan. 1-Nov. 1.
	Quail, wild turkey	Jan. 1-Nov. 1.
	Ruffed grouse or pheasant, pinnated grouse or prairie chicken, sharp-tailed, dusky, and other grouse.	Jan. 1-Sept. 1.
	Turtle dove	At all times.
	Wild mallard duck, wood duck, teal, shoveler or spoonbill, canvasback, widgeon or baldpate, gadwall or gray duck, dusky or black duck, buffle-headed or butter-ball duck, pin or sprig tail, ruddy or turkey-tail duck, goose, brant.	May 1-Sept. 1.
Nevada (1895-1897.)	Deer, elk, caribou, antelope, mountain sheep, mountain goat.	Jan. 1-Sept. 1.
	Quail, partridge, grouse, pheasant, yellow-hammer, woodcock.	Mar. 15-Sept. 15.
	Sage cock (see exceptions)	Mar. 1-Aug. 15.
	Exceptions: Elko, Eureka, Lander, and Humboldt counties, Mar. 1-July 1.	
	Plover, snipe, curlew, mud hen, sandhill crane, wood duck, teal, mallard, or other ducks, wild goose, brant, swan.	Apr. 1-Sept. 15.
New Hampshire	Deer, moose, caribou	Dec. 1-Sept. 15.
	Gray squirrel, raccoon	Jan. 1-Sept. 15.
	Hare, rabbit	Apr. 1-Sept. 15.
	Quail, partridge, ruffed grouse, woodcock	Dec. 15-Sept. 15.
	Pheasant, black game, capercailzie, sharp-tail grouse	Until Sept. 15, 1901.
	Plover, yellow-legs, sandpiper, rail, duck (except sheldrake).	Feb. 1-Aug. 1.
	('Beach birds' may be shot in Rockingham County after July 15.)	
New Jersey (1900.)	Deer, 3 years	Until Mar. 24, 1902.
	Squirrels (gray, black, fox), hare, or rabbit	Jan. 1-Nov. 1.
	Quail (partridge), ruffed grouse (partridge or pheasant), English pheasant.	Jan. 1-Nov. 1.

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[1] Deer and elk protected until January 1, 1903, in the following counties: Alcona, Allegan, Huron, Lapeer, Macomb, Ottawa, St. Clair, Sanilac, and Tuscola.

[2] Deer, moose, and caribou may be had in possession for certain purposes 5 days and game birds 10 days after close of open season.

[3] County laws in force.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
New Jersey (1900.)	Ring-necked pheasant, 3 years	Until Mar. 24, 1902.
	Dove, grass or upland plover	Oct. 1–Aug. 1.
	Woodcock	Dec. 11–July 1. Aug. 1–Oct. 1.
	Gray snipe (English or Wilson snipe)	Jan. 1–Mar. 1. May 1–Sep. 1.
	Reedbird, rail-bird, marsh hen	Jan. 2–Aug. 25.
	Duck, goose, brant, or other web-footed wild fowl	May 2–Sept. 1.
New Mexico	Deer, antelope, mountain sheep—all with horns (except in counties named below).	Jan. 1–Oct. 1.
	Elk, 5 years	Until Mar. 16, 1904.
	Mountain goat	At all times.
	Quail, partridge, grouse, prairie chicken, pheasant, wild turkey (except in counties named below).	Jan. 1–Oct. 1.
	In counties of Colfax, Guadalupe, Rio Arriba, San Juan, San Miguel, Santa Fe, Taos, and Union, all game ..... Dec. 1–Sept. 1	
	Pheasants (Chinese or Mongolian) 5 years	Until Mar. 10, 1902.
New York (1900.)	(See special laws for Long Island below).	
	Deer (except in counties of Delaware, Greene, Sullivan, and Ulster, where protected until 1902, and except fawns, protected at all times).	Nov. 16–Sept. 1.
	Elk, moose, caribou, antelope	At all times.
	Squirrel (black or gray)	Dec. 16–Sept. 1.
	Hare, rabbit—only in counties of Albany, Columbia, Erie, Fulton, Greene, Hamilton, Livingston, Monroe, Orange, Orleans, Schoharie, Steuben, Ulster, and Wyoming.	Dec. 16–Sept. 2.
	Richmond County, Dec. 31–Nov. 2; Oneida and Sullivan counties, Feb. 15–Sept. 16.	
	(Unprotected in rest of State except on Long Island.)	
	Quail (except in counties of Genesee, Montgomery, Rensselaer, and Richmond, where protected until 1903.)	Dec. 16–Nov. 1.
	Grouse (except in Sullivan and Ulster counties, Dec. 16–Oct. 1, and in Rensselaer County, where protected until 1903.)	Dec. 16–Sept. 16.
	Dove	At all times.
	Pheasants (Mongolian ring-necked)	Until 1905.
	Woodcock (except in Clinton, Essex, Fulton, Hamilton, and Warren counties, Dec. 16–Aug. 16; Oneida County, Nov. 16–Sept. 1; Richmond County, Jan. 1–July 4, and Ulster County, Dec. 16–Oct. 1; in Rensselaer County until 1903.)	Dec. 16–Sept. 16,
	Plover, surf bird, Wilson's or English snipe, bay snipe, curlew, rail, water chicken, mud hen, gallinule, bittern, grebe, or shore bird.	May 1–Sept. 1.
	Web-footed wild fowl	Apr. 30–Sept. 1.
Long Island	Deer shooting permitted only on first two Wednesdays and Fridays of November.	
	Squirrel (black or gray) hare, rabbit	Jan. 1–Nov. 1.
	Quail, grouse, woodcock	Jan. 1–Nov. 1.
	Pheasants (English or Mongolian ring-necked), in Suffolk County only ..... Feb. 1–Oct. 1	
	Plover, ring-neck, killdeer, oxeye, curlew, Wilson's or English snipe, jacksnipe, bay snipe, surf snipe, winter snipe, yellow-legs, willet, dowitcher, short necks, sandpiper, rail, bittern.	Jan. 1–July 1.
	Meadow hen, mud hen, gallinule, grebe	Dec. 15–Aug. 16.
	Web-footed wild fowl	May 1–Oct. 1.
North Carolina (1883-1899.)	Deer (see exceptions)	Jan. 1–Oct. 1.
	Exceptions:	
	Bertie ..... Feb. 1–Aug. 1	
	Caldwell ..... Until March, 1905	
	Cherokee, Graham, Jackson, Richmond, Swain, Feb. 15–Aug. 15.	
	Clay, Macon ..... Until 1902	
	Currituck (on North River side of Poplar Brand township) ..... Mar. 1–Sept. 21	
	Dare ..... Mar. 1–Oct. 15	
	Hyde (except near Mattamuskeet Lake), Tyrrell, Feb. 15–Aug. 1.	
	Pender ..... Feb. 1–Oct. 1	
	Vance ..... Mar. 15–Oct. 15	
	Columbus, Johnston, Montgomery, and all the counties east of the Wilmington and Weldon R. R. (except New Hanover and such as are mentioned above) ..... Unprotected	
	Squirrel:	
	Bertie, Martin ..... Mar. 1–Aug. 15	
	Pasquotank ..... Mar. 1–Oct. 1	
	Vance ..... Mar. 15–Oct. 15	

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
North Carolina (1883-1899.)	Opossum:	
	Allamance, Anson, Caswell, Chatham, Franklin, Gaston, Guilford, Halifax, Mecklenburg, Moore, Orange, Wake, and Warren ... Feb. 1-Oct. 1	
	Vance ... Mar. 15-Oct. 15	
	Quail or partridge (see exceptions)	Mar. 15-Nov. 1.
	Exceptions:	
	Beaufort, Hyde ... Mar. 20-Oct. 15	
	Bertie, Granville, New Hanover, Richmond, Apr. 1-Oct. 15.	
	Cabarrus ... Mar. 15-Nov. 15	
	Camden, Dare, Tyrrell ... Mar. 1-Oct. 15	
	Currituck ... Apr. 1-Dec. 1	
	Davidson ... Apr. 1-Oct. 1	
	Mecklenburg, Montgomery, Wilson, Feb. 1-Nov. 15.	
	Pasquotank ... Mar. 15-Dec. 1	
	Randolph ... Mar. 1-Nov. 15	
	Rowan ... Feb. 15-Nov. 15	
	Warren ... Mar. 15-Oct. 10	
	Carteret, Cherokee, Clay, Columbus, Dare, Graham, Jones, Macon, Onslow, Swain, Tyrrell ... Unprotected	
	Pheasant: Cherokee County only ... May 10-Oct. 10	
	Wild turkey (see exceptions)	Mar. 15-Nov. 1.
	Exceptions:	
	Bertie, Martin (male birds) ... May 1-Jan. 1	
	Chatham ... Mar. 1-Nov. 1	
	Cherokee ... May 10-Oct. 10	
	Davidson ... Mar. 1-Nov. 15	
	Macon ... May 1-Oct. 15	
	Pender ... Feb. 1-Oct. 1	
	Randolph ... Feb. 1-Dec. 1	
	Stanly ... At all times	
	Warren ... Mar. 15-Oct. 10	
	Carteret, Clay, Columbus, Craven, Cumberland, Dare, Duplin, Graham, Jones, Macon, Montgomery, Onslow, Swain, Tyrrell ... Unprotected	
	Dove (see exceptions)	Mar. 15-Nov. 1.
	Exceptions:	
	Beaufort, Hyde ... Mar. 20-Oct. 15	
	Bertie, Davidson, Granville, New Hanover, Richmond ... Apr. 1-Oct. 15	
	Cabarrus ... Mar. 15-Nov. 15	
	Mecklenburg, Montgomery, Wilson ... Feb. 1-Nov. 15	
	Vance ... Mar. 15-Oct. 15	
	Warren ... Mar. 15-Oct. 10	
	Carteret, Cherokee, Clay, Columbus, Craven, Cumberland, Dare, Duplin, Edgecombe, Graham, Jones, Macon, Montgomery, Moore (practically), Onslow, Pamlico, Swain, Tyrrell, Wilson ... Unprotected	
	Woodcock:	
	Randolph ... Mar. 1-Nov. 15	
	Vance ... Mar. 15-Oct. 15	
	Marsh hen, curlew, and other shore birds:	
	New Hanover ... Apr. 1-Sept. 1	
	Vance ... Mar. 15-Oct. 15	
	Wild fowl:	
	Brunswick, New Hanover ... Mar. 10-Nov. 1	
	Carteret ... Jan. 1-Dec. 1	
	Currituck ... Apr. 1-Nov. 10	
	Vance ... Mar. 15-Oct. 15	
North Dakota (1899.)	Deer	Dec. 10-Oct. 10.
	Elk, moose, caribou, buffalo, mountain sheep, antelope,	At all times.
	Quail, English or Chinese pheasant, wild swan, 6 years	Until Aug. 21, 1905.
	Sharp-tailed grouse, ruffed grouse, pinnated grouse, prairie chicken, woodcock.	Oct. 1-Aug. 20.
	Crane, wild goose, brant	May 1-Aug. 20.
	Wild duck	Jan. 1-Aug. 20.
Ohio[1] (1900.)	Wild deer	Dec. 16-Nov. 10.
	Squirrel, rabbit	Dec. 2-Nov. 10.
	Quail, ruffed grouse or pheasant, prairie chicken, plover, killdeer, woodcock, snipe, rail.	Dec. 2-Nov. 10.
	Coot or mud hen, wild duck	Dec. 2-Mar. 10. Apr. 11-Nov. 10.
	English, Mongolian, and ring-necked pheasants	Dec. 16-Nov. 10.

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[1] Close seasons for sale of game: Dove, Dec. 16-July 4; killdeer, plover, snipe, rail, May 16-Sept. 1; coot or mud hen, wild duck, Apr. 16-Sept. 1.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Oklahoma (1899.)	Deer, antelope	At all times.
	Quail	Feb. 1-Oct. 15.
	Prairie chicken, wild turkey	Jan. 1-Sept. 1.
	Mongolian or other pheasants	Until Jan. 1, 1904.
	Grouse	At all times.
	Dove, plover	Jan. 1-Aug. 1.
Oregon (1895-1899.)	Deer (except spotted fawn, protected at all times), moose, mountain sheep.	Nov. 1-July 15.
	Elk	Until 1910.
	Silver-gray squirrel (*Sciurus fossor*)	Jan. 1-Oct. 1.
	Quail or partridge, grouse, prairie chicken, pheasant or Mongolian pheasant, see p. 16 (Mongolian pheasants protected in Clatsop, Coos, Curry, Jackson, and Josephine counties until 1902).	Dec. 1-Oct. 1.
	Wild turkey, English partridge, 5 years	Until Feb. 1, 1904.
	Jacksnipe	Feb. 1-Sept. 1.
	Mallard, wood duck, widgeon, teal, spoonbill, gray, black, sprig-tail, canvasback duck, wild swan.	Mar. 15-Sept. 1.
	East of Cascades: Quail or 'bob-white' protected at all times; grouse, Nov. 1-Aug. 1; prairie chickens, Nov. 15-Sept. 1; Mongolian pheasants protected at all times.	
Pennsylvania (1897.)	Deer, elk	Dec. 1-Nov. 1.
	Squirrel (black, gray, or fox)	Dec. 16-Oct. 15.
	Hare, rabbit	Dec. 16-Nov. 1.
	Quail, partridge, grouse, prairie chicken, pheasant, wild turkey.	Dec. 16-Oct. 15.
	Pheasants (Chinese, English, Mongolian), 5 years	Until May 27, 1902.
	Woodcock	Dec. 16-July 1. Aug. 1-Oct. 15.
	Upland or grass plover	Jan. 1-July 15.
	Rail, reedbird	Dec. 1-Sept. 1.
	Web-footed wild fowl	May 1-Sept. 1.
Rhode Island (1900.)	Deer, 5 years	Until Feb. 1, 1905.
	Gray squirrel, rabbit, hare	Jan. 1-Oct. 15.
	Quail or bob-white, ruffed grouse or partridge, woodcock.	Dec. 16-Oct. 15.
	Pheasant (except ruffed grouse), 5 years	Until Oct. 1, 1905.
	Dove	At all times.
	Plover, snipe, sandpiper, peep, sanderling, greater and lesser yellow-legs, curlew, rail.	Dec. 16-July 15.
	Wild duck, goose, brant	Jan. 1-Aug. 15.
South Carolina	Deer (see exceptions)	Feb. 1-Sept. 1.
	Exceptions: Berkeley, Clarendon, Colleton, Darlington, Georgetown, Horry, Kershaw, Marlboro, Marion, and Williamsburg Feb. 1-Aug. 1	
	Quail, partridge, pheasant, wild turkey, woodcock	Apr. 1-Nov. 1.
	Mongolian or ring-neck pheasants, 10 years	Until Dec. 22, 1903.
	Dove	Mar. 1-Aug. 1.
South Dakota (1899.)	Deer, elk, antelope, buffalo, mountain sheep	Jan. 1-Oct. 15.
	Quail, ruffed grouse, sharp-tailed grouse, pinnated grouse, prairie chicken, woodcock.	Jan. 1-Sept. 1.
	Plover, curlew	May 15-Sept. 1.
	Wild crane, duck, goose, brant	May 1-Sept. 1.
Tennessee (1896-1899.)	Deer:	
	Anderson, Cheatham, Coffee, Dickson, Fayette, Hamblen, Hardeman, Haywood, Houston, Jefferson, Knox, Lake, London, McMinn, Monroe, Obion, Roane, Rutherford, Stewart, Sumner, Tipton, Trousdale, Williamson Jan. 1-Aug. 1	
	Carter, Johnson (by law of 1887), Sullivan. Protected absolutely.	
	Bedford, Davidson, Dyer, Giles, Henry, Madison, Maury, Wilson Mar. 1-Sept. 1	
	Bledsoe, Cumberland, Dekalb, Fentress, Hamilton, Hancock, Johnson (by law of 1893), Montgomery, Morgan, Rhea, Unicoi, White Dec. 1-Oct. 1	
	Franklin Jan. 1-Oct. 1	
	Grainger, Lauderdale Mar. 1-Oct. 1	
	Hardin Mar. 15-Sept. 15	
	Shelby Feb. 1-Sept. 1	
	Warren Feb. 1-Nov. 1	
	The restrictions on deer hunting in the remaining counties seem to be somewhat uncertain.	
	Squirrel: (Shelby County only) Feb. 1-Sept. 1(?).	
	Quail or partridge:	
	Anderson, Blount, Cocke, Coffee, Dickson, Fayette, Hancock, Hardeman, Houston, Jefferson, Knox, Lake, London, McMinn, Monroe, Roane, Sevier, Stewart, Sumner, Tipton, Williamson. Mar. 1-Nov. 1(?)	
	Bedford, until Feb. 10, 1902; Bradley, Greene, Warren Feb. 1-Nov. 1	

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Tennessee (1896-1899.)	Quail and partridge—Continued.	
	Carter, Hamblen, Hamilton, Hawkins, Henderson, Henry, Johnson, Marion, Sullivan, Unicoi	Apr. 1-Oct. 1
	Cheatham	Mar. 1-Oct. 15
	Davidson, Lincoln, Madison	Mar. 1-Sept. 15
	Dyer	Apr. 1-Sept. 1
	Franklin	Apr. 1-Dec. 1
	Gibson, Giles, Weakley, Wilson (law of 1899)	Mar. 1-Nov. 1
	Grainger, Lauderdale	Mar. 1-Oct. 1
	Hardin	Mar. 15-Sept. 15
	Haywood, Marshall, Montgomery, Rutherford	Feb. 15-Nov. 16
	Maury	Until Apr. 17, 1901
	Obion, Shelby	Until Nov. 15, 1900
	Putnam	Feb. 1-Oct. 1
	Robertson	Feb. 1-Sept. 1
	Trousdale	Jan. 1-Nov. 1
	Washington	Feb. 1-Nov. 16
	Wilson (law of 1897)	Until Mar. 30, 1902
	The restrictions on quail shooting in the remaining counties seem to be somewhat uncertain.	
	Grouse:	
	Bedford, Davidson, Dyer, Giles, Hamilton, Henry, Lincoln, Madison, Maury, Wilson	Feb. 1-Sept. 1
	Bradley, Greene, Warren	Feb. 1-Nov. 1
	Cheatham, Montgomery	Mar. 1-Oct. 15
	Grainger	Mar. 1-Oct. 1
	Hardin	Mar. 15-Sept. 15
	Robertson, Sumner, Trousdale	Until Apr. 21, 1904
	Shelby	Feb. 1-Sept. 1
	Pheasant:	
	Bedford, Davidson, Dyer, Giles, Lincoln, Madison, Maury, Wilson	Mar. 1-Sept. 15
	Bradley, Greene, Warren	Feb. 1-Nov. 1
	Carter, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington	Apr. 1-Oct. 1
	Cheatham, Montgomery	Mar. 1-Oct. 15
	Grainger	Mar. 1-Oct. 1
	Hardin	Mar. 15-Sept. 15
	Haywood	Feb. 15-Nov. 16
	Putnam	Feb. 1-Oct. 1
	Robertson, Sumner, Trousdale	Until Apr. 21, 1904
	Weakley	Mar. 1-Nov. 1
	Chinese pheasant (except Warren County, until Feb. 12, 1903), English and other [imported] pheasants	Until Mar. 13, 1902.
	Turkey:	
	Bedford, Davidson, Dyer, Giles, Madison, Maury, Wilson	May 1-Sept. 15
	Bledsoe, Fentress, Rhea, White	May 1-Oct. 1
	Carter, Greene, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington	Apr. 1-Oct. 1
	Cheatham, Montgomery	Mar. 1-Oct. 15
	Franklin	Apr. 1-Sept. 1
	Grainger, Lauderdale	Mar. 1-Oct. 1
	Hardin	Mar. 15-Sept. 15
	Haywood	Feb. 15-Nov. 16[1]
	Lincoln	Mar. 1-Sept. 15
	Morgan	Dec. 1-Oct. 1
	Putnam	Feb. 1-Oct. 1
	Robertson, Shelby	Feb. 1-Sept. 1
	Warren	Feb. 1-Nov. 1
	Weakley	Mar. 1-Nov. 1
	Wilson (under 'other game birds')	Apr. 1-Aug. 1
	Dove:	
	Bradley, Greene	Feb. 1-Nov. 1
	Cheatham, Montgomery	Mar. 1-Aug. 1
	Wilson (laws of 1897, p. 423)	Until Mar. 30, 1902
	Wilson (laws of 1899, p. 79)	Apr. 1-Aug. 1
	Plover:	
	Cheatham, Montgomery	May 1-Sept. 1
	Wilson (under 'other game birds')	Apr. 1-Aug. 1
	Woodcock:	
	Bedford, Davidson, Dyer, Giles, Lincoln, Madison, Maury	Mar. 1-Sept. 15
	Bradley, Greene	Feb. 1-Nov. 1
	Carter, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington	Apr. 1-Oct. 1

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[1] An attempt is made to make the close season for turkey in this county May 1-Nov. 1. See Laws of 1897, p. 420.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Tennessee (1896–1899.)	Woodcock—Continued.	
	Cheatham, Montgomery Mar. 1-Aug. 1	
	Hardin Mar. 15-Sept. 15	
	Haywood Feb. 15-Nov. 16	
	Robertson, Shelby Feb. 1-Sept. 15	
	Wilson Until Mar. 30, 1902	
	Snipe:	
	Bedford, Davidson, Dyer, Giles, Lincoln, Madison, Maury Mar. 1-Sept. 15	
	Bradley, Greene Feb. 1-Nov. 1	
	Cheatham, Montgomery May 1-Sept. 1	
	Hardin Mar. 15-Sept. 15	
	Robertson, Shelby Feb. 1-Sept. 1	
	Wilson Until Mar. 30, 1902	
	Duck:	
	Cheatham, Montgomery May 1-Sept. 1	
	Grainger, Lauderdale Mar. 1-Oct. 1	
	Weakley Mar. 1-Nov. 1	
	Warren Feb. 1-Nov. 1	
	Wilson (under 'other game birds') Apr. 1-Aug. 1	
Texas (1897.)	Deer	Jan. 1-Sept. 1.
	Antelope, 5 years	Until June, 1902.
	Quail or partridge	Mar. 15-Oct. 1.
	Prairie chicken or pinnated grouse	Feb. 1-Aug. 1.
	Wild turkey	Apr. 1-Sept. 1.
	Pheasant (English or Mongolian), 5 years	Until June, 1902.
Utah (1899.)	Deer	Nov. 1-Oct. 1.
	Elk, buffalo or bison, mountain sheep, antelope, quail (see exception), English, Mongolian or Chinese pheasant, pinnated grouse, any introduced game animals, or game birds.	At all times.
	Exception: Quail (Kane and Washington counties only) Mar. 1-Oct. 1	
	Partridge, grouse, prairie chicken, sage hen, pheasant.	Dec. 1-Aug. 15.
	Mourning dove	Dec. 1-July 1.
	Snipe, duck, wild goose, brant, swan	Apr. 1-Sept. 15. Dec. 15-Mar. 1.
Vermont	Deer (with horns may be killed only during last ten days of October).	Nov. 1-Oct. 22.
	Deer without horns, moose, caribou	At all times.
	Rabbit, hare	May 1-Sept. 1.
	Quail, ruffed grouse or partridge, plover (other than upland), woodcock, English snipe, wild duck, goose	Jan. 1-Sept. 1.
	Pheasant, English partridge	Nov. 20-Oct. 1.
	Introduced pheasants, by owners on inclosed lands	Dec. 1-Oct. 10.
	Dove	At all times.
	Upland plover	Dec. 1-Aug. 15.
Virginia[1]	Deer	Jan. 1-Aug. 15.
	Quail or partridge:	
	Accomac, King George, Lee, Northampton, Northumberland, Jan. 15-Nov. 15	
	Albemarle, Fauquier, Gloucester, Loudoun, Mathews, Prince William, Roanoke, Shenandoah, Wythe Jan. 1-Nov. 1	
	Alexandria, Bland, Buchanan, Campbell, Carroll, Charles City, Chesterfield, Craige, Dickenson, Giles, Goochland, Grayson, Greene, James City, Louisa, Lunenburg, Madison, Middlesex, Montgomery, New Kent, Orange, Page, Patrick, Pittsylvania, Powhatan, Prince Edward, Rappahannock, Russell, Scott, Tazewell, Warwick, Wise, York (State law)	Jan. 1-Oct. 15.
	Alleghany, Augusta, Bath, Botetourt, Highland, Rockbridge Dec. 25-Nov. 1	
	Amelia, Brunswick, Buckingham, Cumberland, Lancaster, Nottoway, Richmond Feb. 1-Oct. 15	
	Amherst, Caroline, Charlotte, Dinwiddie, Essex, Franklin, Hanover, Henrico, King William, Nelson, Prince George, Pulaski, Smyth, Spottsylvania, Stafford, Surry, Washington, Westmoreland Feb. 1-Nov. 1	
	Appomattox Unprotected	
	Bedford, Culpeper, Fairfax Jan. 15-Nov. 1	
	Clarke, Warren Dec. 25-Oct. 31	
	Elizabeth City, Norfolk, Princess Anne, Feb. 1-Nov. 15	
	Floyd Jan. 15-Oct. 1	
	Fluvanna Jan. 15-Oct. 15	
	Frederick Dec. 15-Nov. 1	

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[1] Numerous local laws are in force, but only those relating to quail have been compiled to date.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Virginia	Quail or partridge—Continued.	
	Greenville, Sussex, Isle of Wight, Nansemond, Southampton Feb. 15-Nov. 1	
	Halifax, King and Queen Feb. 15-Oct. 15	
	Henry Feb. 1-Oct. 25	
	Mecklenburg Mar. 1-Oct. 15	
	Rockingham Dec. 15-Oct. 15	
	Pheasants or ruffed grouse, wild turkey, west of Blue Ridge (except Rockbridge County)	Feb. 1-Sept. 15.
	In Rockbridge and all counties east of Blue Ridge (except Fluvanna, Feb. 15-Oct. 15; Prince Edward, Mar. 1-Oct. 15)	Jan. 15-Oct. 15.
	English or Mongolian pheasants protected at all times in counties of Albemarle, Alleghany, Augusta, Bath, Bedford, Culpeper, Fauquier, Highland, Loudoun, Louisa, Montgomery, Prince William, and Rockbridge, and in city of Charlottesville.	
	Woodcock (except Alexandria and Fairfax counties, Jan. 1-July 4)	Apr. 1-Nov. 1.
	Marsh hen	June 20-Jan. 1.
	Willet	Jan. 1-July 15.
	Water fowl (except summer duck)	May 1-Sept. 1.
Washington (1897-1899.)	Deer (except spotted fawn, protected at all times)	Dec. 15-Sept. 15.
	Elk, moose, caribou, antelope, mountain sheep, mountain goat.	Nov. 1-Sept. 1.
	Bobwhite, California valley quail, mountain quail, oriental pheasants (bronze, Chinese,[1] copper, golden, Mongolian,[1] ring-necked, silver), 2 years.	Until Oct. 15, 1901.
	Partridge, grouse, sage hen, native pheasant, ptarmigan.	Dec. 1-Aug. 15.
	Prairie chicken (protected in Kittitas and Klickitat counties until October, 1901).	Dec. 1-Aug. 15.
	Plover, rail, sandhill crane, mallard, canvasback, widgeon, teal, wood duck, spoonbill, gray or black duck, sprigtail or other game duck, swan or other game waterfowl.	Mar. 1-Aug. 15.
West Virginia	Deer (except spotted fawn, protected at all times)	Dec. 15-Oct. 15.
	Quail or Virginia partridge	Dec. 20-Nov. 1.
	Ruffed grouse, pheasant, pinnated grouse, or prairie chicken.	Dec. 15-Oct. 15.
	Wild turkey	Jan. 15-Sept. 15.
	Dove	At all times.
	Woodcock	Nov. 2-July 15.
	Snipe	July 1-Mar. 1.
	Blue-winged teal, mallard, wood duck or other wild duck, goose, brant.	Apr. 1-Oct. 1.
Wisconsin (1898-99.)	Deer (in red coat, or fawn in spotted coat, protected at all times; all deer in Sheboygan and Fond du Lac counties until Apr. 10, 1902) excepting first 20 days of November.	Nov. 21-Nov. 1.
	Quail, pheasants (Chinese, English, Mongolian)	Until Sept. 1, 1901.
	Partridge, grouse, prairie chicken or hen, pheasant, plover, woodcock, snipe (see also below).	Dec. 1-Sept. 1.
	Turtle dove	At all times.
	Wild duck, brant, or any aquatic fowl, except wild goose, but including snipe.	Jan. 1-Sept. 1.
	Wild goose	May 1-Sept. 1.
Wyoming (1899.)	Deer, elk, antelope, mountain sheep, mountain goat	Dec. 1-Sept. 1.
	Moose, 3 years	Until Sept. 1, 1902.
	Partridge, grouse, prairie chicken, prairie hen, pheasant.	Dec. 1-Aug. 15.
	Sage chicken	Oct. 15-July 15.
	Plover, snipe, green shank, tatler, godwit, curlew, avocet, or other wader, duck, goose, brant.	May 1-Sept. 1.
	Wild swan	At all times.
British Columbia (1898.)	Deer (fawns protected at all times), mountain sheep (ewes and lambs protected at all times), mountain goat.	Dec. 15-Sept. 1.
	Elk or wapiti, moose, caribou (cow or calf elk, moose, or caribou protected at all times), hare.	Jan. 1-Sept. 1.
	Quail, English partridge, pheasant	At all times.
	Grouse, prairie chicken	Jan. 1-Sept. 1.
	Plover, duck	Mar. 1-Sept. 1.
Manitoba (1900.)	Deer, elk, or wapiti, moose, caribou or reindeer, antelope or cabri (females of foregoing species protected at all times).	Dec. 1-Sept. 15.
	Quail, plover, woodcock, snipe, sandpiper	Jan. 1-Aug. 1.
	Grouse, pheasant, partridge, prairie chicken	Nov. 15-Oct. 1.
	Duck	Jan. 1-Sept. 1.

[1] Except in Skamania County.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
New Brunswick (1899.)	Deer, moose, caribou (see exceptions) *Exceptions:* Cow and calf moose protected at all times; all moose and caribou west of river St. John protected until Sept. 15, 1902.	Jan. 1-Sept. 15.
	Partridge	Dec. 1-Sept. 15.
	Pheasant	At all times.
	Snipe, woodcock, teal, wood duck, dusky or black duck, goose, brant.	Dec. 2-Sept. 1.
Newfoundland (1899.)	Elk, moose	Until Jan. 1, 1906.
	Caribou	Feb. 1-July 16. Oct. 1-Oct. 21.
	Hare, rabbit	Mar. 1-Sept. 16.
	Ptarmigan or willow grouse (partridge), other grouse, plover, snipe, curlew, or 'other wild or migratory birds (except wild geese).'	Jan. 12-Sept. 16.
Northwest Territories. (1899.)	(For Keewatin see below.)	
	Deer, elk, moose, caribou, antelope	Dec. 15-Nov. 1.
	Mountain sheep, mountain goat	Dec. 15-Oct. 1.
	Buffalo	At all times.
	Grouse, partridge, prairie chicken	Dec. 15-Sept. 15.
	Snipe, sandpiper, wild duck	May 5-Aug. 23.
Unorganized Territories (Keewatin, etc.). (1894.)	Deer, elk or wapiti, caribou, mountain sheep, mountain goat.	Apr. 1-July 15. Oct. 1-Dec. 1.
	Musk ox	Mar. 20-Oct. 15.
	Grouse, pheasant, partridge, prairie chicken	Jan. 1-Sept. 1.
	Duck, goose, swan	Jan. 15-Sept. 1.
Nova Scotia (1896)	Red deer, elk	Until 1904.
	Moose	Jan. 1-Sept. 15.
	Caribou	Jan. 1-Oct. 1.
	Rabbit, hare (except jack rabbit and Newfoundland hare, which are protected at all times).	Feb. 1-Oct. 1.
	Spruce partridge, sharp-tailed grouse, ptarmigan, blackcock, capercailzie, 'chukor' partridge, pheasant.	At all times.
	Canada and ruffed grouse (partridge)	Until Oct. 1, 1901.
	Woodcock, snipe, teal, blue-winged duck, wood duck	Mar. 1-Sept. 1.
Ontario (1900)	Deer (young protected at all times)	Nov. 16-Nov. 1.
	Moose, caribou, or reindeer	Until Nov. 1, 1903.[1]
	Elk or wapiti	At all times.
	Hare, squirrel (black and gray)	Dec. 16-Sept. 15.
	Quail	Dec. 16-Oct. 15.
	Grouse, woodcock, plover, snipe, rail, other 'shore' birds or 'waders.'	Dec. 16-Sept. 15.
	Wild turkey	Until Oct. 15, 1905.
	Prairie fowl, English and Mongolian pheasants	Until Sept. 15, 1905.
	Goose, swan	May 1-Sept. 15.
	Ducks and 'other waterfowl' (except geese and swans).	Dec. 16-Sept. 1.
Quebec[2] (1899.)	*Zone 1.* Deer, moose. (See exceptions). *Exceptions:* In Ottawa and Pontiac counties Dec. 1-Oct. 1.	Jan. 1-Sept. 1.
	Cow moose and fawns	At all times.
	Caribou (fawns protected at all times)	Feb. 1-Sept. 1.
	Hare	Feb. 1-Nov. 1.
	Bear	July 1-Aug. 20.
	Birch, or swamp partridge	Dec. 15-Sept. 1.
	White partridge or ptarmigan	Feb. 1-Nov. 1.
	Plover, woodcock, snipe, curlew, tatler, sandpiper	Feb. 1-Sept. 1.
	Bufflehead or pied duck	Apr. 15-Sept. 1.
	Widgeon, teal, wild-duck (except sheldrake)	Apr. 1-Sept. 1.
	Zone 2. Close seasons same as in zone 1, except as follows:	
	Caribou	Mar. 1-Sept. 1.
	Hare	Mar. 1-Oct. 15.
	Birch, or swamp partridge	Feb. 1-Sept. 15.
	White partridge or ptarmigan	Mar. 1-Nov. 15.

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[1] Open season Nov. 1-15, 1900, and every third year thereafter.

[2] Zone No. 1 comprises the whole Province, except that part of the counties of Chicoutimi and Saguenay east and north of the river Saguenay. Zone No. 2 comprises the part of said counties east and north of the Saguenay.

DIVERSITY IN SEASONS.

The foregoing table shows that the greatest diversity exists in the close seasons prescribed by the various States. In order to emphasize this more strongly and to facilitate comparison of close seasons in contiguous States, a table has been prepared in which the States are arranged geographically in three groups according to the Hallock code as explained below. This table will be found at the end of the bulletin. A special table has also been made showing the close seasons and the number of days in the open seasons in the case of four typical kinds of game—big game, represented by deer; upland game birds, by quail; wading birds (including 'shore birds'), by woodcock; and waterfowl, by ducks (see p. 31–32).

DEER.

Deer are protected absolutely in seven States, and are apparently without protection in Delaware and Kansas. The open seasons in the rest of the Union vary in length from ten days in Vermont and three weeks in Michigan, Minnesota, and Wisconsin, to six months in Arkansas. They begin at various dates from July 15 to November 10, but usually close before January 1, except in some of the Southern States—South Carolina, Florida, Mississippi, Arkansas, Louisiana, and Kentucky. (See Pl. III).

QUAIL.

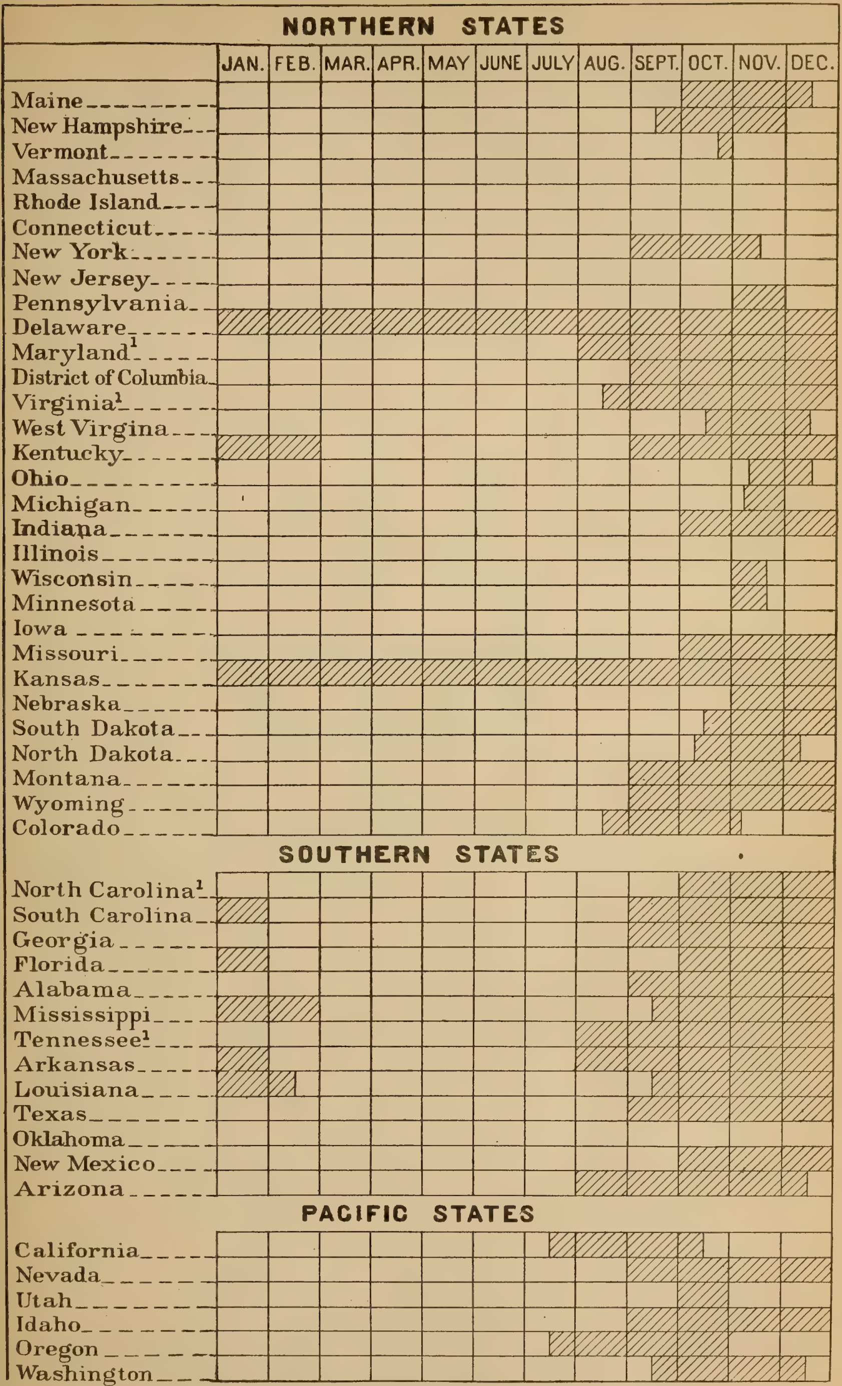
At present quail are protected absolutely in six States. The open seasons are usually shorter than in the case of any other birds, the average for the Northern States being two to three months and for the Southern States four to five. In the Northern States the open seasons vary from twenty-one days in Ohio to four months in Vermont. They begin in October or November (except in New Hampshire, Vermont, and South Dakota) and close before January 1 (except in the District of Columbia). In the South and West, however, they extend to March 1 (in Mississippi to May 1), except in New Mexico, Idaho, and Oregon, where shooting after the first of the year is prohibited. (See Pl. IV).

WOODCOCK.

Woodcock do not occur west of the Great Plains. In the South they are almost entirely without protection, while in the North the open seasons, as compared with those for quail, show great irregularity, and range from three to five months in length. In New Jersey, Pennsylvania, and Maryland shooting is permitted during the month of July, and in the District of Columbia, Virginia, and Kentucky until after the 1st of January. Delaware, Kansas, Nebraska, and all but three of the Southern States apparently extend no protection to these birds. (See Pl. V.)

The lack of adequate protection is even more marked in the case of other wading birds. Plover, snipe, or rail have close seasons in about

PLATE III.



NORTHERN STATES

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Maine										▨	▨	▨
New Hampshire									▨	▨	▨	
Vermont										▨		
Massachusetts												
Rhode Island												
Connecticut												
New York									▨	▨	▨	
New Jersey												
Pennsylvania											▨	
Delaware	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Maryland[1]								▨	▨	▨	▨	▨
District of Columbia									▨	▨	▨	▨
Virginia[1]								▨	▨	▨	▨	▨
West Virgina										▨	▨	▨
Kentucky	▨	▨							▨	▨	▨	▨
Ohio											▨	▨
Michigan											▨	
Indiana										▨	▨	▨
Illinois												
Wisconsin											▨	
Minnesota											▨	
Iowa												
Missouri										▨	▨	▨
Kansas	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Nebraska											▨	▨
South Dakota										▨	▨	▨
North Dakota										▨	▨	▨
Montana									▨	▨	▨	▨
Wyoming									▨	▨	▨	▨
Colorado								▨	▨	▨	▨	

SOUTHERN STATES

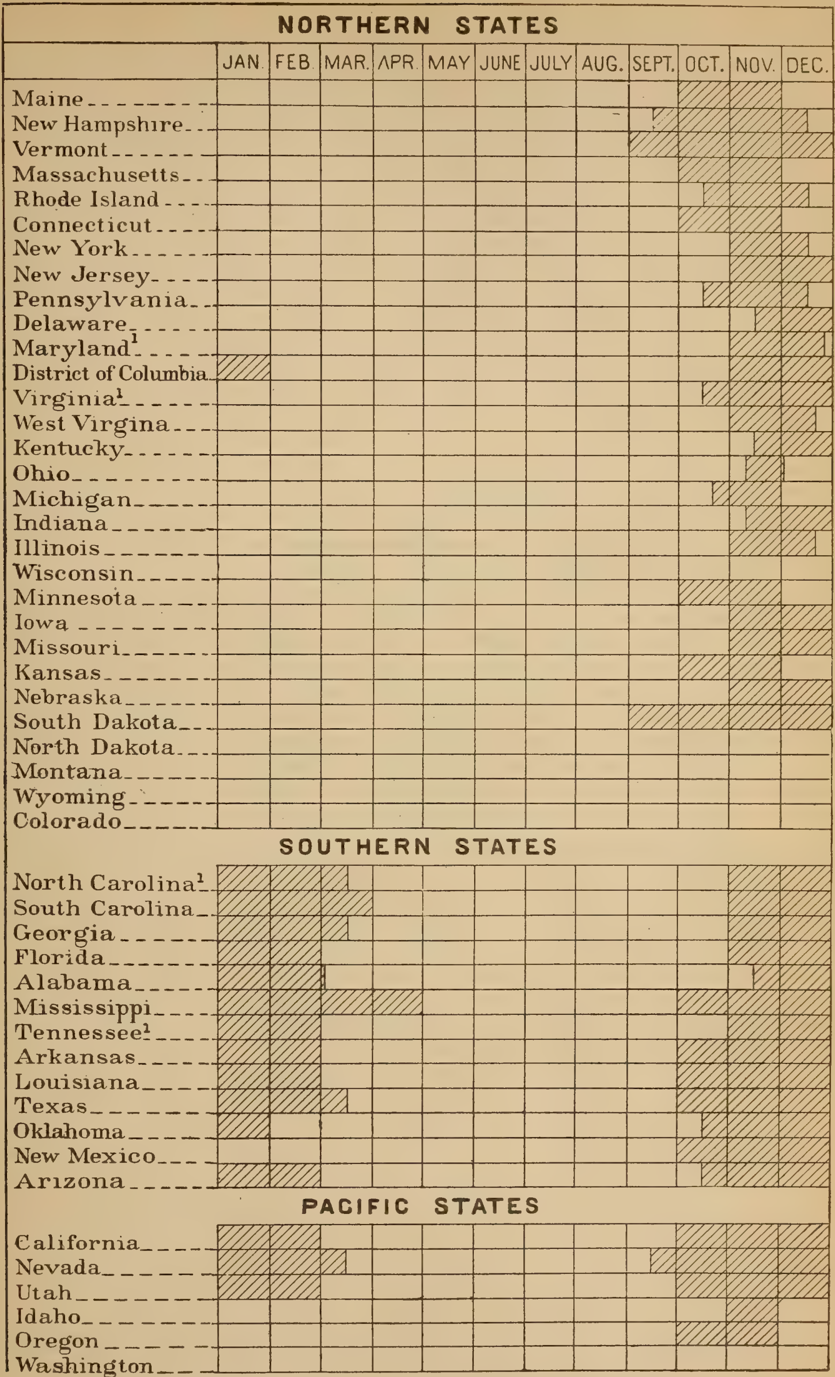
	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
North Carolina[1]										▨	▨	▨
South Carolina	▨								▨	▨	▨	▨
Georgia									▨	▨	▨	▨
Florida	▨									▨	▨	▨
Alabama									▨	▨	▨	▨
Mississippi	▨	▨							▨	▨	▨	▨
Tennessee[1]								▨	▨	▨	▨	▨
Arkansas	▨							▨	▨	▨	▨	▨
Louisiana	▨	▨							▨	▨	▨	▨
Texas									▨	▨	▨	▨
Oklahoma												
New Mexico										▨	▨	▨
Arizona								▨	▨	▨	▨	▨

PACIFIC STATES

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
California							▨	▨	▨	▨		
Nevada									▨	▨	▨	▨
Utah										▨		
Idaho									▨	▨	▨	▨
Oregon							▨	▨	▨	▨		
Washington									▨	▨	▨	▨

DIAGRAM SHOWING OPEN SEASONS FOR DEER IN 1900.

The shaded areas show the months when shooting is permitted; the unshaded areas, the time when deer are protected by law. [1] Seasons vary in different counties.



NORTHERN STATES	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Maine										▨	▨	
New Hampshire									▨	▨	▨	▨
Vermont									▨	▨	▨	▨
Massachusetts										▨	▨	
Rhode Island										▨	▨	▨
Connecticut										▨	▨	
New York											▨	▨
New Jersey											▨	▨
Pennsylvania										▨	▨	▨
Delaware											▨	▨
Maryland[1]											▨	▨
District of Columbia	▨										▨	▨
Virginia[1]										▨	▨	▨
West Virgina											▨	▨
Kentucky											▨	▨
Ohio											▨	
Michigan										▨	▨	
Indiana											▨	▨
Illinois											▨	▨
Wisconsin												
Minnesota										▨	▨	
Iowa											▨	▨
Missouri											▨	▨
Kansas										▨	▨	
Nebraska											▨	▨
South Dakota									▨	▨	▨	▨
North Dakota												
Montana												
Wyoming												
Colorado												
SOUTHERN STATES												
North Carolina[1]	▨	▨	▨								▨	▨
South Carolina	▨	▨	▨								▨	▨
Georgia	▨	▨	▨								▨	▨
Florida	▨	▨									▨	▨
Alabama	▨	▨									▨	▨
Mississippi	▨	▨	▨	▨						▨	▨	▨
Tennessee[1]	▨	▨									▨	▨
Arkansas	▨	▨								▨	▨	▨
Louisiana	▨	▨								▨	▨	▨
Texas	▨	▨	▨							▨	▨	▨
Oklahoma	▨									▨	▨	▨
New Mexico										▨	▨	▨
Arizona	▨	▨								▨	▨	▨
PACIFIC STATES												
California	▨	▨								▨	▨	▨
Nevada	▨	▨	▨						▨	▨	▨	▨
Utah	▨	▨								▨	▨	▨
Idaho											▨	
Oregon										▨	▨	
Washington												

DIAGRAM SHOWING OPEN SEASONS FOR QUAIL IN 1900.

The shaded areas show the months when shooting is permitted; the unshaded areas, the time when the birds are protected by law. Spring shooting is prohibited in practically all of the Northern States, in New Mexico, and several of the Pacific States. [1] Seasons vary in different counties.

thirty States, but no protection is afforded these or other shore birds in the South, except in Oklahoma and a few counties of Tennessee. South Dakota, Colorado, Wyoming, and Nevada protect curlew; North and South Dakota, Colorado, Nevada, and Washington protect cranes, but only six States—New Hampshire, Massachusetts, Rhode Island, New York, Illinois, and Wyoming—protect shore birds in general. In these six States the close seasons are short, varying from two months and a half in Massachusetts to six months in Rhode Island; the open seasons begin from July 15 to September 1, and as a rule continue until the first of the following April or May. No game is more in need of protection than shore birds, and unless close seasons are more generally observed, the effect of unrestricted slaughter will soon be apparent.

DUCKS.

Comparison of the diagrams showing open seasons for ducks and quail brings out the great disparity in the protection afforded these two kinds of birds. Notwithstanding their abundance in many localities, waterfowl are in great need of protection, but receive comparatively little, and in nine States apparently none at all at the present time. With few exceptions the open seasons begin the 1st of September and extend to the 1st of April or May—a period of seven or eight months, or nearly three times as long as the average quail season in the North. In New Hampshire, Rhode Island, Kentucky, North Dakota, Idaho, and Washington the seasons open as early as August, but, on the other hand, in Vermont, Rhode Island, Minnesota, Wisconsin, and North Dakota they close before the end of the year, and thus do away with spring shooting. The shortest open season (53 days) is that of Ohio. (See Pl. VI.)

Close and open seasons for deer, quail, woodcock, and ducks in 1900.

NORTHERN STATES.

State.	Close seasons.				Open seasons in days.			
	Deer.	Quail.	Woodcock.	Ducks.	Deer.	Quail.	Woodcock.	Ducks.
Maine	Dec. 15-Oct. 1	Dec. 1-Oct. 1	Dec. 1-Sept. 15	May 1-Sept. 1	75	61	77	242
New Hampshire.	Dec. 1-Sept. 15[1]	Dec. 15-Sept. 15	Dec. 15-Sept. 15	Feb. 1-Aug. 1	77	91	91	184
Vermont	Nov. 1-Oct. 22	Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1	10	122	122	122
Massachusetts.	Until Nov. 1, 1903.	Dec. 1-Oct. 1	Dec. 1-Oct. 1	May 20-Sept. 1	0	61	61	261
Rhode Island	Until Feb. 1, 1905.	Dec. 16-Oct. 15	Dec. 16-Oct. 15	Jan. 1-Aug. 15	0	62	62	138
Connecticut	Until Oct. 1, 1903.	Dec. 1-Oct. 1	Dec. 1-Oct. 1	May 1-Sept. 1	0	61	61	242
New York	Nov. 16-Sept. 1	Dec. 16-Nov. 1	Dec. 16-Sept. 16	Apr. 30-Sept. 1	76	45	91	241
New Jersey	Until Mar. 24, 1902.	Jan. 1-Nov. 1	Dec. 11-Oct. 1[2]	May 2-Sept. 1	0	61	102	243
Pennsylvania.	Dec. 1-Nov. 1	Dec. 16-Oct. 15	Dec. 16-Oct. 15[2]	May 1-Sept. 1	30	62	93	242
Delaware		Jan. 1-Nov. 15		Apr. 15-Oct. 1	365	47	365	196
Maryland[1]	Jan. 1-Aug. 1	Dec. 25-Nov. 1	Dec. 25[2]-Nov. 1	Apr. 10-Nov. 1	153	54	85	160

[1] See special county regulations, pp. 19–21.

[2] Except month of July.

Close and open seasons for deer, quail, woodcock, and ducks in 1900—Continued.

NORTHERN STATES—Continued.

State.	Close seasons.				Open seasons in days.			
	Deer.	Quail.	Woodcock.	Ducks.	Deer.	Quail.	Woodcock.	Ducks.
District of Columbia.	Jan. 1-Sept. 1	Feb. 1-Nov. 1	Jan. 15-July 15	May 1-Sept. 1	122	92	184	242
Virginia	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Apr. 1-Nov. 1	May 1-Sept. 1	139	78	151	242
West Virginia.	Dec. 15-Oct. 15	Dec. 20-Nov. 1	Nov. 2-July 15	Apr. 1-Oct. 1	61	49	110	182
Kentucky	Mar. 1-Sept. 1	Jan. 1-Nov. 15	Feb. 1-June 20	Apr. 1-Aug. 15	181	47	226	229
Ohio	Dec. 16-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10[1]	36	22	22	53
Michigan	Dec. 1-Nov. 8	Dec. 1-Oct. 20	Dec. 1-Oct. 20	Feb. 1-Sept. 1	23	42	42	153
Indiana	Jan. 1-Oct. 1	Jan. 1-Nov. 10	Jan. 1-July 1	Apr. 15-Sept. 1	92	52	184	226
Illinois	Until Apr. 13, 1904.	Dec. 20-Nov. 1	Dec. 1-Sept. 1	Apr. 15-Sept. 1	0	49	91	226
Wisconsin	Except Nov. 1-21.	Until Sept. 1901.	Dec. 1-Sept. 1	Jan. 1-Sept. 1	20	0	91	122
Minnesota	Except Nov. 1-21.	Dec. 1-Oct. 1	Oct. 31-July 4	Jan. 1-Sept. 1	20	61	120	122
Iowa	Protected at all times.	Jan. 1-Nov. 1	Jan. 1-July 10	Apr. 15-Sept. 1	0	61	175	226
Missouri	Jan. 1-Oct. 1	Jan. 1-Nov. 1	Jan. 1-Aug. 1	Apr. 1-Oct. 1	92	61	153	182
Kansas	------	Dec. 1-Oct. 1	------	------	365	61	365	365
Nebraska	Jan. 1-Nov. 1	Jan. 1-Nov. 1	------	May 1-Sept. 1	61	61	365	242
S. Dakota	Jan. 1-Oct. 15	Jan. 1-Sept. 1	Jan. 1-Sept. 1	May 1-Sept. 1	78	122	122	242
N. Dakota	Dec. 10-Oct. 10	Until Aug. 21, 1905.	Oct. 1-Aug. 20	Jan. 1-Aug. 20	61	0	42	134
Montana	Jan. 1-Sept. 1	Protected at all times.	------	May 1-Sept. 1	122	0	----	242
Wyoming	Dec. 1-Sept. 1	Protected at all times.	------	May 1-Sept. 1	91	0	----	242
Colorado	Nov. 6-Aug. 15	Protected at all times.	------	Apr. 16-Sept. 1	83	0	----	227
SOUTHERN STATES.								
N. Carolina	Dec. 31-Oct. 1	Mar. 15-Nov. 1	------	Nov. 10-Apr. 1[2]	91	134	365	151
S. Carolina	Feb. 1-Sept. 1	Apr. 1-Nov. 1	Apr. 1-Nov. 1	------	153	151	151	365
Georgia	Jan. 1-Sept. 1	Mar. 15-Nov. 1	------	------	122	134	365	365
Florida	Feb. 1-Oct. 1	Mar. 1-Nov. 1	------	Apr. 1-Oct. 1	123	120	365	182
Alabama	Jan. 1-Sept. 1	Mar. 2-Nov. 15	Mar. 2-Nov. 15	------	122	107	107	365
Mississippi	Mar. 1-Sept. 15	May 1-Oct. 1	------	------	167	212	365	365
Tennessee[3]	Jan. 1-Aug. 1	Mar. 1-Nov. 1	Mar. 1-Sept. 15	May 1-Sept. 1	153	120	167	242
Arkansas	Feb. 1-Aug. 1	Mar. 1-Oct. 1	------	------	184	151	365	365
Louisiana	Feb. 15-Sept. 15	Mar. 1-Oct. 1	------	Apr. 1-Sept. 1	153	151	365	212
Texas	Jan. 1-Sept. 1	Mar. 15-Oct. 1	------	------	122	165	365	365
Oklahoma	Protected at all times.	Feb. 1-Oct. 15	------	------	0	109	365	365
New Mexico	Jan. 1-Oct. 1	Jan. 1-Oct. 1	------	------	92	92	----	365
Arizona	Dec. 15-Aug. 1	Mar. 1-Oct. 15	------	Apr. 1-Oct. 1	136	137	----	182
PACIFIC STATES.								
California	Oct. 15-July 15	[4] Mar. 1-Oct. 1	------	Mar. 1-Oct. 1	92	151	----	151
Nevada	Jan. 1-Sept. 1	Mar. 15-Sept. 15	Mar. 15-Sept. 15	Apr. 1-Sept. 15	122	181	181	198
Utah	Nov. 1-Oct. 1	[3] Mar. 1-Oct. 1	------	Apr. 1-Sept. 15 Dec. 15-Mar. 1	31	[3] 151	----	122
Idaho	Jan. 1-Sept. 1	Dec. 1-Nov. 1	------	Mar. 1-Aug. 15	122	30	----	198
Oregon	Nov. 1-July 15	Dec. 1-Oct. 1	------	Mar. 15-Sept. 1	109	61	----	195
Washington	Dec. 15-Sept. 15	Until Oct. 15, 1901.	------	Mar. 1-Aug. 15	91	0	----	198

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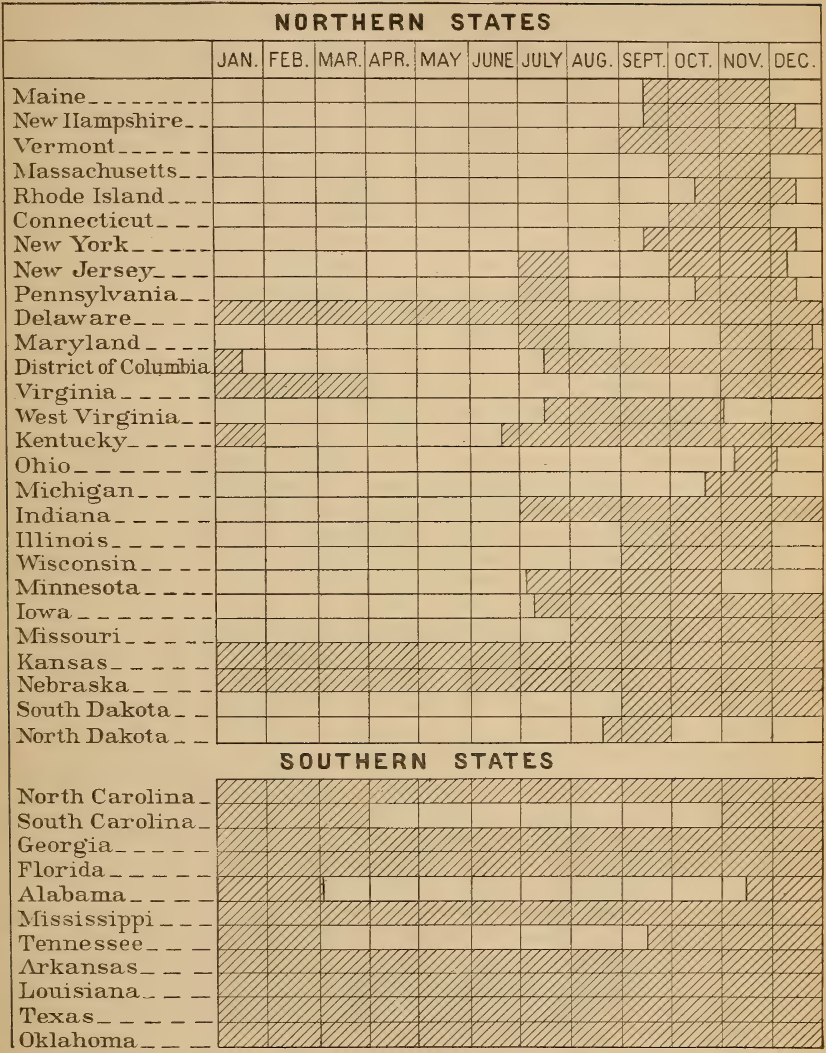
[1] Except Mar. 10-Apr. 11.

[2] Currituck County.

[3] County regulations.

[4] Mountain quail Feb. 15-Sept. 1.



NORTHERN STATES	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Maine									▨	▨	▨	
New Hampshire									▨	▨	▨	▨
Vermont									▨	▨	▨	▨
Massachusetts										▨	▨	
Rhode Island										▨	▨	▨
Connecticut										▨	▨	
New York									▨	▨	▨	▨
New Jersey							▨			▨	▨	▨
Pennsylvania							▨			▨	▨	▨
Delaware	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Maryland							▨				▨	▨
District of Columbia	▨						▨	▨	▨	▨	▨	▨
Virginia	▨	▨	▨								▨	▨
West Virginia							▨	▨	▨	▨		
Kentucky	▨					▨	▨	▨	▨	▨	▨	▨
Ohio											▨	▨
Michigan										▨	▨	
Indiana							▨	▨	▨	▨	▨	▨
Illinois									▨	▨	▨	
Wisconsin									▨	▨	▨	
Minnesota							▨	▨	▨	▨		
Iowa							▨	▨	▨	▨	▨	▨
Missouri								▨	▨	▨	▨	▨
Kansas	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Nebraska	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
South Dakota									▨	▨	▨	▨
North Dakota								▨	▨			
SOUTHERN STATES												
North Carolina	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
South Carolina	▨	▨	▨								▨	▨
Georgia	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Florida	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Alabama	▨	▨	▨								▨	▨
Mississippi	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Tennessee	▨	▨							▨	▨	▨	▨
Arkansas	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Louisiana	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Texas	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Oklahoma	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨

DIAGRAM SHOWING OPEN SEASONS FOR WOODCOCK IN 1900.

The shaded areas show the months when shooting is permitted; the unshaded areas, the time when the birds are protected by law. Seasons vary in different counties in Maryland, Virginia, and Tennessee.

NORTHERN STATES

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Maine	▨	▨	▨	▨					▨	▨	▨	▨
New Hampshire	▨							▨	▨	▨	▨	▨
Vermont									▨	▨	▨	▨
Massachusetts	▨	▨	▨	▨	◧				▨	▨	▨	▨
Rhode Island								◨	▨	▨	▨	▨
Connecticut	▨	▨	▨	▨					▨	▨	▨	▨
New York	▨	▨	▨	▨					▨	▨	▨	▨
New Jersey	▨	▨	▨	▨					▨	▨	▨	▨
Pennsylvania	▨	▨	▨	▨					▨	▨	▨	▨
Delaware	▨	▨	▨	◧						▨	▨	▨
Maryland[1]	▨	▨	▨	◧							▨	▨
District of Columbia	▨	▨	▨	▨					▨	▨	▨	▨
Virginia[1]	▨	▨	▨	▨					▨	▨	▨	▨
West Virgina	▨	▨	▨							▨	▨	▨
Kentucky	▨	▨	▨					◨	▨	▨	▨	▨
Ohio			◨	◧							◨	
Michigan	▨								▨	▨	▨	▨
Indiana	▨	▨	▨	◧					▨	▨	▨	▨
Illinois	▨	▨	▨	◧					▨	▨	▨	▨
Wisconsin									▨	▨	▨	▨
Minnesota									▨	▨	▨	▨
Iowa	▨	▨	▨	◧					▨	▨	▨	▨
Missouri	▨	▨	▨							▨	▨	▨
Kansas	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Nebraska	▨	▨	▨	▨					▨	▨	▨	▨
South Dakota	▨	▨	▨	▨					▨	▨	▨	▨
North Dakota								◨	▨	▨	▨	▨
Montana	▨	▨	▨	▨					▨	▨	▨	▨
Wyoming	▨	▨	▨	▨					▨	▨	▨	▨
Colorado	▨	▨	▨	◧					▨	▨	▨	▨

SOUTHERN STATES

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
North Carolina[1]	▨	▨	▨								◨	▨
South Carolina	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Georgia	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Florida	▨	▨	▨							▨	▨	▨
Alabama	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Mississippi	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Tennessee[1]	▨	▨	▨	▨					▨	▨	▨	▨
Arkansas	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Louisiana	▨	▨	▨						▨	▨	▨	▨
Texas	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Oklahoma	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
New Mexico	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Arizona	▨	▨	▨							▨	▨	▨

PACIFIC STATES

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
California	▨	▨								▨	▨	▨
Nevada	▨	▨	▨						◨	▨	▨	▨
Utah			▨						◨	▨	▨	◧
Idaho	▨	▨						◨	▨	▨	▨	▨
Oregon	▨	▨	◧						▨	▨	▨	▨
Washington	▨	▨						◨	▨	▨	▨	▨

DIAGRAM SHOWING OPEN SEASONS FOR DUCKS IN 1900.

The shaded areas show the months when shooting is permitted; the unshaded areas, the time when the birds are protected by law. Note that spring shooting is prohibited in Vermont, Rhode Island, Wisconsin, Minnesota, and North Dakota. [1] Seasons vary in different counties.

The diversity of season here shown emphasizes the importance of securing greater uniformity of action on the part of neighboring States. Twenty-five years ago the International Association for the Protection of Game published a comparative table of game laws, clearly illustrating the diversity which existed in 1874. The need of uniformity in seasons has been generally recognized in recent years, but little has actually been accomplished toward bringing about the desired result.

A STEP TOWARD UNIFORMITY—THE HALLOCK CODE.

Of the various schemes proposed for uniform game laws, that suggested by Mr. Charles Hallock in 1897 deserves especial attention. In an address before the National Game, Bird, and Fish Protective Association[1] he advocated a code of cooperative legislation, in accordance with which the United States was to be divided into three 'concessions'[2] in each of which the laws were to be as uniform as possible, the open seasons identical, and protection was to be accorded to insectivorous birds, but withheld from a few species considered injurious.

The feature of special interest in this connection is the simple manner in which the States were grouped together. The three concessions were named Northern, Southern, and Pacific, and as originally proposed were limited as follows: All of the region west of the crest of the Rocky Mountains was included in the Pacific, while all that east of this range was divided at latitude 36° 30′ into a Northern and a Southern concession. This division, however, had the disadvantage of cutting through Colorado and New Mexico, thus giving each a double set of laws. Moreover, the Pacific concession extended from Puget Sound to the Mexican boundary and embraced wide extremes of climate. The scheme has therefore been slightly modified, for present purposes, by extending the Northern concession over the whole of Colorado and allowing the Southern to include not only all New Mexico, but also Arizona (see Pl. VII). This places all the region south of latitude 36° 30′ (except part of southern California) in one division. All the States north of this line with these exceptions belong to the Northern or Southern concessions, while California, Idaho, Nevada, Oregon, Utah, and Washington form the Pacific. For a simple division, this seems to meet all requirements fairly well; and while it may not be practicable to secure identical laws in all the States in each group, a strong effort should at least be made to have the close seasons correspond as nearly as possible.

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[1] Western Field and Stream, Vol. I, pp. 232–234, 1897.

[2] "We call it 'concession,' because it is based on compromise and reciprocity."—Hallock.

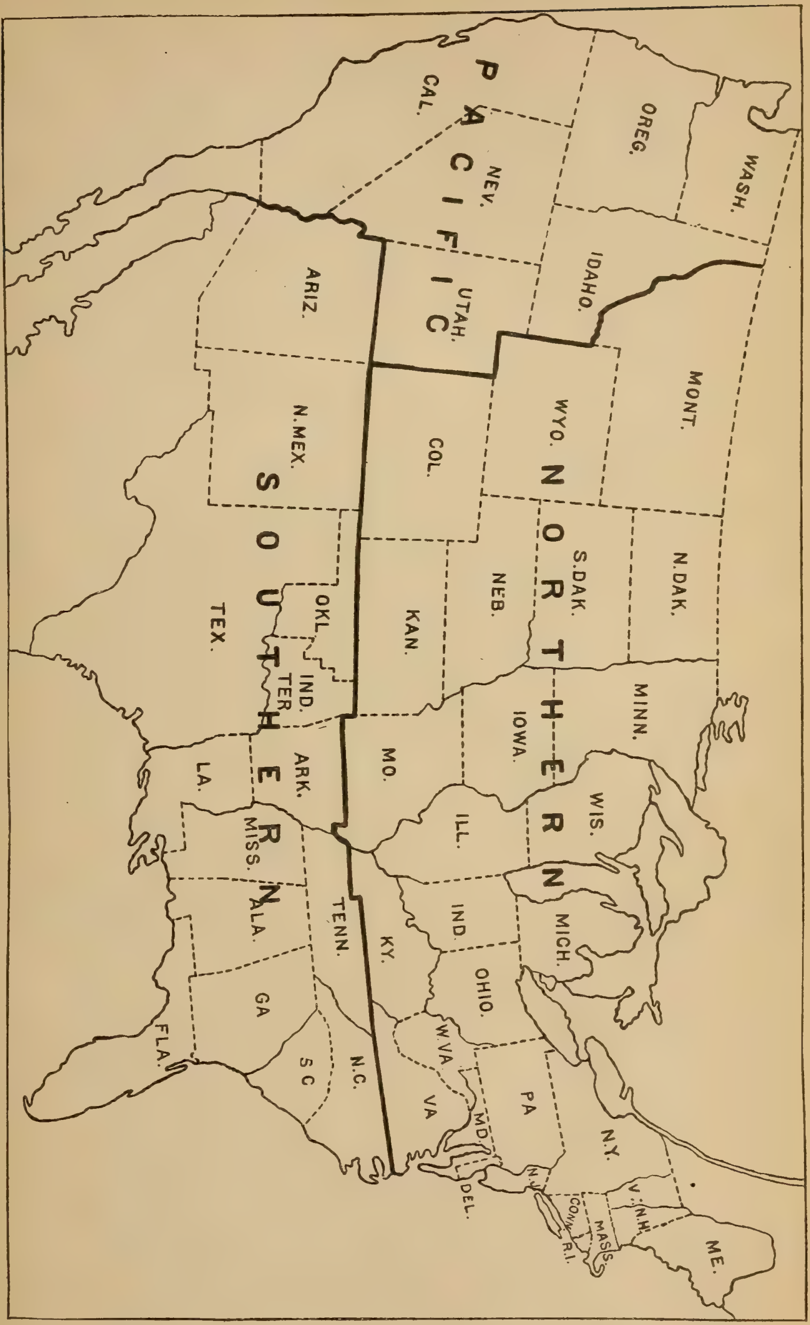
LIMITS OF GAME BAGS.

Besides giving opportunity for recuperation by game animals and birds by establishing closed seasons for part of the year or for a term of years, twenty-one States have attempted to prevent the wanton destruction by limiting the amount of game which may be killed in a day or season. These States comprise the northern tier, from Maine to Washington, and Connecticut, Pennsylvania, Florida, Iowa, South Dakota, Wyoming, Colorado, New Mexico, Utah, and Oregon. The restrictions have been placed mainly on big game and upland game birds, but in a few cases they have been extended to woodcock, rail, and wild fowl. In Colorado and North Dakota practically all the game of the State is limited, while in Iowa, Oregon, and South Dakota the limit applies to game birds, but not to big game. Michigan, Utah, and Wisconsin limit only the number of deer, five being allowed each hunter in Michigan, two in Utah, and two in Wisconsin. The highest limit for big game is in Montana, where six deer, antelope, or mountain goats may be killed in a season. The maximum for any species of game bird in a day is 75 rail in Connecticut, but the usual limit is 25 or 50.

Limits of a similar character and for the same object are also placed by several States on the number of birds which may be shipped at one time or in one season, usually corresponding to the number that may be killed, but seldom, in any event, exceeding 50 at a time. Florida prescribes the limit not only for each person, but also for each party, in order to prevent evasion of the law by several persons hunting together. Thus, four wild turkeys may be killed in a day by one person, but not more than six by a party. The following table, which is compiled from 'Game Laws in Brief,' shows the details of these restrictions:

Limits of game bags.

State.	Game.	Number.
Colorado	Deer, antelope	2 in 1 season.
	Elk	1 in 1 season.
	Duck	50 in 1 day; 100 in possession at one time.
	Other birds	25 in 1 day; 50 in possession at one time.
Connecticut	Ruffed grouse	5 in 1 day; 36 in 1 year.
	Rail	75 in 1 day.
Florida	Deer	5 in 1 year—until Jan. 1, 1905.
	Quail	25 by 1 person, 50 by 1 party, in 1 day.
	Wild turkey	4 by 1 person, 6 by 1 party, in 1 day.
Idaho	Deer, antelope, mountain sheep, mountain goat.	4 in 1 season.
	Elk	2 in 1 season.
Iowa	Quail, ruffed grouse, pinnated grouse, pheasant, woodcock.	25 in 1 day or in possession at one time; 12 may be shipped (not for sale or profit) within the State in 1 day; 25 game birds or animals may be exported under 1 nonresident license.
Maine	Deer	2 in 1 season.
	Moose	1 in 1 season.
	Quail, ruffed grouse, woodcock, wood duck, dusky duck, teal, gray duck.	15 of each in 1 day; 15 of any 1 kind may be transported at one time as the property of 1 person.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MAP SHOWING DIVISIONS PROPOSED BY HALLOCK CODE.

The States and Territories are so grouped that the game seasons may be uniform, or nearly so, in each division.

Limits of game bags—Continued.

State.	Game.	Number.
Michigan	Deer	5 in 1 year.
Minnesota	Deer	5 in 1 season; 5 deer may be shipped by one person after Nov. 5 in any year.
	Moose, caribou	1 of each in 1 season.
	Birds	25 in 1 day.
Montana	Deer, antelope, mountain goat	6 in 1 season.
	Elk, moose	2 in 1 season.
	Partridge, grouse, prairie chicken, fool hen, sage hen, pheasant.	20 in one day.
New Hampshire	Deer, caribou	2 in 1 season.
	Moose	1 in 1 season.
New Mexico	Deer, elk, mountain sheep, antelope.	1 at 1 time.
New York[1]	Deer	2 in 1 season; same limit as to transporting.
	Grouse, woodcock	36 in 1 season; same limit as to transporting.
North Dakota	Deer	5 in 1 season
	Crane, duck, goose, brant	25 in 1 day.[2]
Oregon	Quail, grouse, pheasants of various kinds.	15 in 1 day.
Pennsylvania	Deer	2 in 1 season.
	Quail	15 in 1 day.
	Ruffed grouse, woodcock	10 of each in 1 day.
	Wild turkey	2 in 1 day.
South Dakota	Quail, ruffed grouse, prairie chicken (pinnated grouse), sharp-tailed grouse, woodcock. plover, curlew, crane, duck, goose, brant.	25 in 1 day; 25 may be shipped out of State.
Utah	Deer	2 in 1 season.
Vermont	Deer	1 in 1 season; 1 may be transported.
	Quail, English partridge, ruffed grouse, pheasant, woodcock, plover, English snipe, goose.	5 of each in 1 day.
	Duck	20 in 1 day.
Washington	Deer	4 in 1 season.
	Elk, moose, caribou, antelope, mountain sheep, mountain goat.	2 of each in 1 season.
Wisconsin	Deer	2 in 1 season; 1 deer may be exported on each of the 2 coupons of license; 50 birds at once may be exported by a resident if accompanied by owner; 50 birds or animals may be exported by nonresidents in one year.
Wyoming	Deer, elk	2 of each 1 in season.
	Antelope	3 in 1 season.
	Mountain sheep, mountain goat	1 of each in 1 season.

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[1] Not applicable to Long Island.

[2] Same limit placed on quail, English and Mongolian pheasants, and swans after expiration of close season in 1905.

SHIPMENT OF GAME.

Under the laws of Colorado and Wisconsin packages of fish or game must bear a mark indicating the contents, and under section 4 of the Lacey Act (see p. 47) every package containing game animals or birds when shipped by interstate commerce must be clearly marked so as to show the name and address of the shipper and the nature of the contents. Such general terms as 'game' or 'birds' are not sufficient to show the nature of the contents, and the marks should indicate not only the *kind of game*, but also, if possible, the amount in the package. Railroad and express companies should call the attention of their agents to this provision and insist that all packages must be properly marked before shipment. Packing or marking shipments of game in such a way as to conceal or obscure the nature of the contents of the package may be considered an evasion of the act, the penalty for which is the same as for violation. Under the State law of Wisconsin a fine of $25 to $100 is provided for false marking of packages containing game.

Many of the State laws prohibit export of certain game at all times, and the following table, to which attention is especially called, contains a list of such game. In Maine, New Hampshire, Vermont, New York, Illinois, Michigan, Wisconsin, Minnesota, Iowa, South Dakota, Wyoming, Colorado, and possibly a few other States, sportsmen are allowed to carry a limited amount of game out of the State under special restrictions. In a few States exceptions to the laws prohibiting export are also made in the case of birds and animals intended for propagation, as noted below.

Deer can not be exported from the State under the laws of Alabama, Florida, all the States west of the Mississippi (except Montana, Nebraska, Kansas, Iowa, Missouri, and Louisiana), and all the States north of the Ohio and Potomac rivers (except Illinois, Ohio, Delaware, New Jersey, Connecticut, Rhode Island, and Massachusetts). In Montana they can not be sold, and in Illinois, New Jersey, Connecticut, Massachusetts, and Rhode Island they are protected at all seasons for a term of years. Other big game, such as elk, antelope, mountain sheep, mountain goat, moose, and caribou, can not be shipped from eighteen Northern and Western States, practically all in which such animals now occur. The shipment of deer hides is prohibited by special provisions in the laws of California, Florida, New Mexico, Oregon, and Wyoming, while Washington prohibits killing deer for hides.

Among game birds the most general prohibition is that against the shipment of quail. All but twelve of the States prohibit export of these birds. Among the exceptions are seven Southern States, Montana, and North Dakota; but in Montana the sale, and in North Dakota the killing, of quail are at present unlawful. Twenty-four States, including all those west of the Mississippi River, except six, also prohibit export of pinnated grouse or prairie chickens.

The penalties for violation of the provisions governing transportation are as a rule much heavier than those for killing or sale of game. In Idaho it is unlawful for any railway, express company, stage line, or other public carrier to receive or have in possession any of the game animals of the State for transportation. (This, however, does not apply to mounted heads or stuffed specimens.) In Connecticut, Ohio, Vermont, South Dakota, and West Virginia the receipt of game for shipment is considered *prima facie* evidence that such game was killed within the State and intended for export in violation of law. Common carriers, however, have ample opportunity to protect themselves under the Federal law by observing the clause in regard to the marking of packages, and under certain State laws they are allowed special privileges. In Texas they may examine suspected packages, and in Arkansas they may refuse packages supposed to contain fish or game for export, or may cause them to be opened when necessary.

Export of game prohibited by State laws.[1]

State.	Kinds of game—Penalties.
Alabama, 1899	Deer, squirrel, quail, partridge, grouse, prairie chicken, pheasant, English, Mongolian, or Chinese pheasant, wild turkey, woodcock—penalty, $50-$100.
Arizona, 1897	Deer, elk, antelope, mountain sheep, mountain goat, quail, bobwhite, grouse, prairie chicken, pheasant, wild turkey, dove, snipe, rail, wild duck, goose, brant—penalty, $25-$100.
Arkansas	Deer, quail, Virginia partridge, pinnated grouse or prairie chicken, wild turkey—penalty, $10-$20 for each deer, $25-$50 for each pinnated grouse, and $3-$10 for every other bird.
California, 1897	Deer, deer skins, quail, partridge, grouse, prairie chicken, pheasant, dove, wild duck (except for propagation under permit from fish commission)—penalty, $20-$500, or imprisonment 10-150 days.
Colorado, 1899	Deer, elk, antelope, bison, buffalo, mountain sheep, quail, partridge, grouse, ptarmigan, prairie chicken, sage chicken, pheasant, wild turkey, dove, pigeon, snipe, curlew, crane, duck, goose, brant, swan, waterfowl (game may be exported only under permit from game commissioner)—penalty, $10-$500, or imprisonment 10-180 days, or both fine and imprisonment.
Connecticut	Quail, ruffed grouse, woodcock—penalty, $7-$50.
Delaware, 1893	Rabbit, quail, partridge, woodcock, robin (nonresidents also prohibited from shipping Wilson or English snipe)—penalty, $5 for each rabbit or bird and costs of prosecution.
Florida, 1899	Deer, deer hides, quail, partridge, wild turkey—penalty, $25-$100 or 3-6 months hard labor.
Idaho, 1899	Deer, elk, moose, caribou, antelope, mountain sheep, mountain goat, quail, partridge, grouse, prairie chicken, sage hen or fool hen, pheasant, Mongolian pheasant, wild duck, goose, swan (does not apply to mounted heads or stuffed specimens)—penalty, $25-$75 with costs.
Illinois, 1899	Squirrel, quail, ruffed grouse, pinnated grouse, prairie chicken, pheasant, wild turkey (game may be exported only under license from the State)—penalty, $25-$100.
Indiana, 1881	Deer, quail, grouse, prairie chicken, pheasant, woodcock, wild duck—penalty, $10-$100.
Indian Territory,[2] 1896	Deer, antelope, quail, prairie chicken, wild turkey, or other game from the Chickasaw Nation—penalty, $25-$100 and imprisonment.
Iowa	Squirrel, quail, ruffed grouse, pinnated grouse, prairie chicken, pheasant, wild turkey, woodcock, wild duck, goose, brant (nonresident may take from State not more than 25 game birds or animals killed by himself when carried openly for inspection)—penalty, $10 for each bird and costs of prosecution.
Kansas, 1899	Quail, partridge, grouse, pinnated grouse, prairie chicken, pheasant, dove—penalty, $5-$100, costs, and attorney's fee of $10.
Maine, 1899	Deer, moose, and game birds (quail, ruffed grouse, pheasant, capercailzie or cock of the woods, black game, plover, woodcock, snipe, sandpiper, wood duck, dusky or black duck, teal, gray duck)—penalty, $40 and costs for each deer or moose, $5 for each bird.
Maryland, 1898-1900:	
Anne Arundel	Quail, partridge, pheasant, woodcock—penalty, $5 for each bird.
Caroline	Rabbit, quail, partridge, woodcock—penalty, $5 for each rabbit or bird.
Frederick	Squirrel, partridge, pheasant, woodcock, taken in county—penalty, $50.
Kent	Squirrel, rabbit, or any bird taken in county for sale—penalty, $30.
Montgomery	Partridge, pheasant, wild turkey, for sale—penalty, $10.
Queen Anne	Rabbit, partridge, woodcock, taken in county for sale—penalty, $5 for each bird.
Somerset	Squirrel, rabbit, partridge, pheasant, dove, woodcock, duck, goose—penalty, $5-$25 for each animal or bird.
Washington	Deer, squirrel, rabbit, partridge, pheasant, wild turkey, taken in county for sale—penalty, $10-$20.
Wicomico and Worcester.	Quail or partridge (both counties considered as one territory)—penalty, $5-$25.
Massachusetts, 1890	Quail, ruffed grouse, woodcock—penalty, $20.
Michigan, 1893	Deer, elk, squirrel, quail, partridge, prairie chicken, ruffed grouse, spruce hen, pheasant, Mongolian or English pheasant, wild turkey, dove, pigeon, plover, snipe, woodcock, duck, goose, brant, or other wild waterfowl—penalty, $10-$50.
Minnesota, 1897	Deer, elk, moose, caribou (unless in charge of some person other than an employee of a common carrier), quail, partridge, ruffed grouse, pheasant, prairie chicken, pinnated grouse, sharp-tailed or white-breasted grouse, Mongolian, English, or Chinese pheasant, dove, upland plover, snipe, woodcock, wild duck, goose, brant—penalty, $50-$100 and costs, or imprisonment 60-90 days for each deer, elk, moose, or caribou; $10-$25 and costs, or imprisonment 10-30 days, for each bird.

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[1] Prohibitions against transporting game within the State or from one county to another are not included.

[2] 'Every person other than an Indian who hunts, traps, takes, or destroys any game, except for subsistence in the Indian country, shall forfeit all traps, guns, and ammunition in his possession, and shall be liable in addition to a penalty of $500.' (Rev. Stat., U. S., 1878, sec. 2137.)

Export of game prohibited by State laws—Continued.

State.	Kind of game—Penalties.
Nevada, 1899	Deer, antelope, mountain sheep, quail, grouse, sage chicken, prairie chicken, dove, wild duck, goose—penalty, $20-$500, or imprisonment 10-90 days, or both.
New Hampshire	Deer, moose, caribou (unless open to view, tagged, and accompanied by owner). Pheasant, blackgame, sharp-tailed grouse, capercailzie—penalty for big game, $50; for imported game birds, $20, or imprisonment 60 days, or both.
New Jersey, 1900	Hare, rabbit, squirrel, quail or partridge, ruffed grouse or pheasant, English pheasant, woodcock—penalty—
New Mexico, 1899	Deer, elk, antelope, mountain sheep, mountain goat (or hides of any of said animals), quail, partridge, grouse, prairie chicken, pheasant, Mongolian or Chinese pheasant, wild turkey—penalty, $25-$100, or imprisonment 30-60 days, or both fine and imprisonment.
New York, 1900	Game or birds taken in the State, including deer, elk, antelope, moose, caribou, squirrel, hare and rabbit, quail, grouse, Mongolian and English pheasant, plover, Wilson and English snipe, woodcock, curlew, shore birds, rail, mud hen, gallinule, water chicken, web-footed wild fowl, etc.—penalty, mammals, $100 for each violation and an additional $100 for each deer, elk, antelope, moose, or caribou; birds, $60 for each violation and an additional $25 for each bird.
North Carolina, 1883	Quail or partridge—penalty, fine not exceeding $50, or imprisonment not exceeding 30 days. (Wild fowl, Currituck County only, Mar. 31-Nov. 10.)
North Dakota	Deer, elk, moose, caribou, antelope, buffalo, mountain sheep, ruffed grouse, prairie chicken, pinnated grouse, sharp-tailed grouse, woodcock, wild duck, wild goose, brant, wild swan—penalty, $100 for each animal, $10 for each bird.
Ohio, 1900	Squirrel, quail, ruffed grouse or pheasant, prairie chicken, Mongolian pheasant, English or ring-neck pheasant, wild turkey, woodcock—penalty, $25-$100.
Oklahoma, 1899	Deer, antelope, quail, grouse, prairie chicken, Mongolian, or other pheasant, wild turkey, dove, plover—penalty, for shipper, $25-$100 and costs; for common carrier, $50-$500 and costs.
Oregon, 1899	Deer, moose, mountain sheep (or hides of said animals) for purposes of sale; quail or bob-white, grouse, pheasant, Mongolian, silver, golden, copper, or green Japanese pheasant, wild duck, goose, swan, or other wild fowl (except birds raised in confinement and shipped for breeding purposes)—penalty, for big game $100-$500 and costs, or imprisonment; for birds, $15-$200, or imprisonment 7-100 days, or both fine and imprisonment.
Pennsylvania, 1897	Deer, elk, rabbit, hare, squirrel, quail, partridge, grouse, prairie chicken, pheasant, English, Mongolian, or Chinese pheasant, wild turkey, reedbird, plover, woodcock, rail, web-footed wild fowl taken in the State—penalty, $100 for deer or elk, $25 for birds.
Rhode Island, 1900	Quail, ruffed grouse, woodcock—penalty, $20 for each bird.
South Carolina, 1900	Quail or partridge for sale (until 1905)—penalty, not exceeding $30, or imprisonment not exceeding 30 days.
South Dakota, 1899	Deer, elk, antelope, buffalo, mountain sheep, quail, ruffed grouse, prairie chicken, pinnated grouse, sharptailed grouse, plover, curlew, woodcock, crane, wild duck, wild goose, brant (except that any game, and not more than 25 birds not intended for commercial purposes, may be shipped in open view during open season and 3 days thereafter, when tagged and accompanied by owner)—penalty, for big game $25-$200, or imprisonment 30-180 days, or both fine and imprisonment; for birds, $10-$50.
Tennessee, 1896-99	Quail, from State prohibited until Mar. 24, 1902—penalty, $5-$10 for each quail.
Anderson, Rutherford, Sumner, Tipton, Wilson.	Quail, partridge, prairie chicken, grouse, pheasant from county.
Benton	Quail, partridge, squirrel from county.
Bledsoe, Campbell, Carter, Claiborne, Clay, Cumberland, Fentress, Johnson, Meigs, Morgan, Pickett, Putnam, Rhea, Scott, Sequatchie, Van Buren, White.	Nonresidents prohibited from killing or carrying away any game.
Bradley, Dyer, Hawkins	Quail or partridge for profit from county.
Carroll, Crockett, Gibson, Grainger, Hamblen, Henderson. Madison, Obion.	Quail, partridge from county.
Carter, Greene, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington.	Quail, partridge, woodcock, pheasant, turkey, from State.
Grundy, Van Buren	Deer, quail, partridge, turkey from county.
Haywood	Quail, partridge, woodcock, pheasant, turkey from county.

Export of game prohibited by State laws—Continued.

State.	Kind of game—Penalties.
Tennessee, 1896-99—Cont'd.	
Lauderdale	Deer, quail, turkey, duck from county.
Robertson, Sumner, Trousdale.	Quail, partridge, grouse, pheasant from county.
Warren	Turkey from county.
Weakley	Quail, partridge, pheasant, lark, turkey, duck from county.
Texas, 1897	Deer, antelope, quail or partridge, grouse, pinnated grouse or prairie chicken, Mongolian or English pheasant, wild turkey, plover, snipe, jacksnipe (does not apply to Mongolian or English pheasants shipped for breeding purposes)—penalty, $25-$200 for each shipment.
Utah, 1899	Deer, elk, antelope, buffalo or bison, mountain sheep, partridge, prairie chicken, sage hen or grouse, pinnated grouse, pheasant, Mongolian, Chinese, or English pheasant, dove, snipe, duck, goose, brant, swan, or any introduced game animal or bird—penalty, not less than $10.
Vermont, 1896	Deer, quail, ruffed grouse or partridge, pheasant, English partridge, plover, English snipe, woodcock, wild duck, wild goose (except that game birds may be shipped by nonresidents during open season and 3 days thereafter, and 1 deer during open season and 10 days thereafter, if shipped in open view, properly tagged, and accompanied by owner)—penalty for deer, $100; for birds, $50.
Washington, 1897	Deer, elk, moose, caribou, antelope, mountain sheep or goat, partridge, grouse, prairie chicken, sage hen, pheasant, ptarmigan, plover, rail, sand-hill crane, mallard duck, widgeon, teal, wood duck, spoonbill, gray or black duck, sprig-tail, canvasback duck (or other game duck), swan, or other game waterfowl, or any other game animal or bird of the State, including introduced bobwhite, California valley quail, mountain quail, and Old World pheasants—penalty, $10-$100 and costs.
West Virginia, 1899	Deer, quail, pheasant, ruffed grouse, wild turkey—penalty, $20-$50 and imprisonment, at discretion of court, not exceeding 10 days.
Wisconsin, 1899	Deer (unless license be held and in that case only from Nov. 6-26), quail, partridge, grouse, prairie chicken or prairie hen, pheasant, Mongolian, Chinese, or English pheasant, dove, plover, snipe, woodcock, wild duck, goose, brant, or other aquatic fowl (does not apply to shipment of live birds; in the case of duck, snipe, and plover, the prohibition applies only from Dec. 1-Sept. 1)—penalty, $50-$200, or imprisonment 60 days-6 months, or both fine and imprisonment.
Wyoming, 1899	Deer, elk, moose, antelope, mountain sheep, mountain goat, or horns or hides of any of said animals (does not apply to mounted heads or stuffed specimens)—penalty, $100-$500 for each consignment.

TRANSPORTATION OF LIVE GAME FOR PROPAGATION.

In some States the prohibition against export is so broad as to include not only dead game, but also live animals and birds intended for propagation. Legislation aimed directly at the sale of live game for such purposes is found in at least one State, Montana, which declares that any person who shall willfully catch, trap, or otherwise restrain for the purpose of sale or domestication, or any other purpose, any buffalo, elk, moose, or mountain sheep shall be guilty of a misdemeanor. Delaware, North Carolina, and Tennessee have stringent laws prohibiting the export of quail, dead or *alive*, out of the State. Such laws may sometimes interfere seriously with efforts to obtain birds for restocking depleted covers, and seem to be unnecessarily severe. Where States have a board of fish or game commissioners or State wardens, such officials could easily be given authority to issue permits for the shipment of a limited number of animals or birds intended for breeding purposes. A few States have adopted this principle, and some others make exceptions in their nonexport laws or permit possession of game at any time if intended for propagation. These exceptions are shown in the following list:

EXCEPTIONS TO NONEXPORT AND OTHER LAWS IN FAVOR OF GAME FOR PROPAGATION.

Arizona.—Exception in case of all game birds for propagation. (Laws of 1897, p. 77, sec. 2.)

California.—Exception in case of deer, antelope, elk, mountain sheep, and game birds for propagation, provided that a permit in writing first be obtained from the State board of fish commissioners. (Penal Code, 1897, sec. 627, p. 218.)

Colorado.—Game commissioner may grant permits to proprietors of parks for exchange of game with other persons within or without the State.

Game for propagation may be imported from any other State or Territory, and the commissioner shall issue certificate therefor without charge.

The commissioner may, upon being satisfied that the possession or transportation of game is not in violation of the spirit of this act, grant a permit therefor. (Laws of 1899, ch. 98, pp. 196, 204, 207.)

Connecticut.—Exception in case of gray squirrels or game birds for domestication or propagation. (Gen. Stats., 1888, sec. 2540.)

Illinois.—Unlawful to export any squirrels or game birds captured within the State, except under a license from the State of Illinois. (Laws of 1899, p. 224, sec. 2.)

Maryland.—Exceptions in the local laws of Cecil and Harford counties in case of game for propagation. (Acts of 1896, ch. 237; acts 1894, ch. 139.)

Nevada.—Exception in case of big game and game birds for propagation. (Compiled Laws, 1900, sec. 865.)

New Jersey.—Exception in case of domesticating or bringing into the State any animals or birds for propagation or keeping the same until a reasonable opportunity offers for their release. (Gen. Pub. Laws of 1895, Ch. CCLV, sec. 16.)

Oklahoma.—Exception in case of fine birds or animals captured for domestic or scientific purposes, provided that not more than one pair of such birds or animals may be shipped at one time. (Laws of 1899, p. 167, sec. 11.)

Oregon.—Exception in case of game birds for breeding purposes, provided written permit first be obtained from game and forestry warden upon affidavit that said birds were bred in confinement. (Laws of 1899, p. 134. secs. 6-8.)

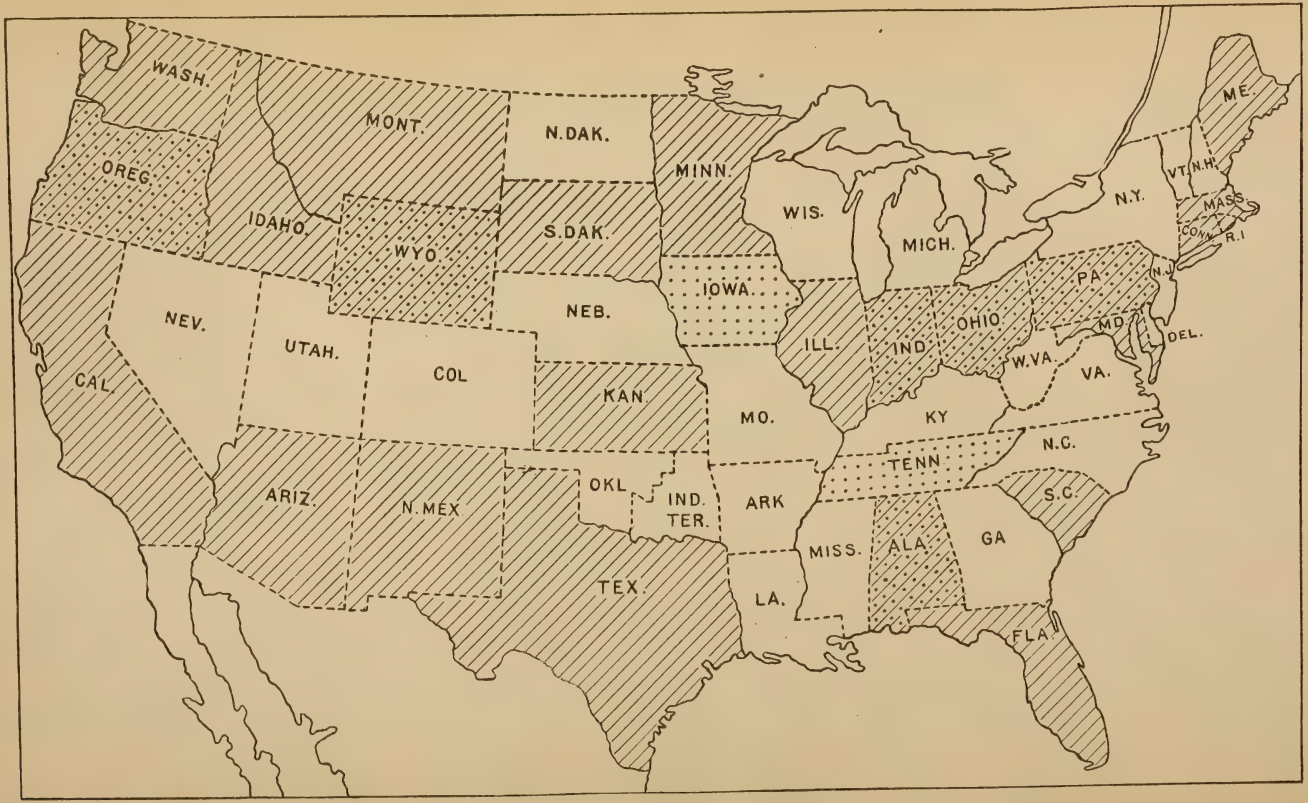
Texas.—Exception in case of live Mongolian or English pheasants shipped for scientific or breeding purposes. (Gen. Laws of 1897, ch. 149, sec. 7.)

Utah.—Exception in the case of quail for propagation, taken in Kane and Washington counties. (Laws of 1899, ch. 26, sec. 26.)

Wyoming.—Lawful to sell any colin or quail for the purpose of breeding, or for any person to take alive on his own premises at any time any big game for domestication or for scientific or breeding purposes. (Rev. Stats., 1899, sec. 2117.)

MARKET HUNTING AND SALE.

Twenty-eight States and Territories prohibit trade in certain game. This traffic is of two kinds: Sale of game, or market traffic; and killing game for sale, or market hunting. Killing for sale is prohibited in Alabama, Indiana, Iowa, Ohio, Oregon, Pennsylvania, Tennessee, Wyoming, the Chickasaw Nation in Indian Territory, and some of the counties of Maryland. In Kansas, Colorado, Idaho, and Montana, the sale of all game protected by the State law is prohibited; in Arizona, big game and wild turkeys; in New Mexico, all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MAP SHOWING STATES WHICH PROHIBIT MARKET HUNTING OR SALE OF GAME AT ALL TIMES.

Eight States (dotted) prohibit killing for sale, 24 States (shaded) the sale of certain game. Idaho, Kansas, and Montana prohibit sale of all game protected by State law. For kinds of game affected in other States, see pages 40–42.

game killed in the Territory; and in Washington, all big game and all upland game are subject to the same restriction. Hides of deer and other big game can not lawfully be sold in Arizona, California, Florida, Idaho, New Mexico, Oregon, Texas, Washington, or Wyoming. Under the State laws of Illinois, New Mexico, and Pennsylvania, certain game killed within the State can not be sold at any time, but the sale of the same kind of game imported from other States is permitted at certain seasons. In this connection, attention may again be called to section 5 of the Lacey act, which provides that all game animals imported into any State shall be subject to the operation of the laws of that State to the same extent and in the same manner as in the case of game produced in that State. The following table shows the kind of game the market hunting or sale of which is prohibited by the various States:

Market hunting and sale prohibited by State laws.

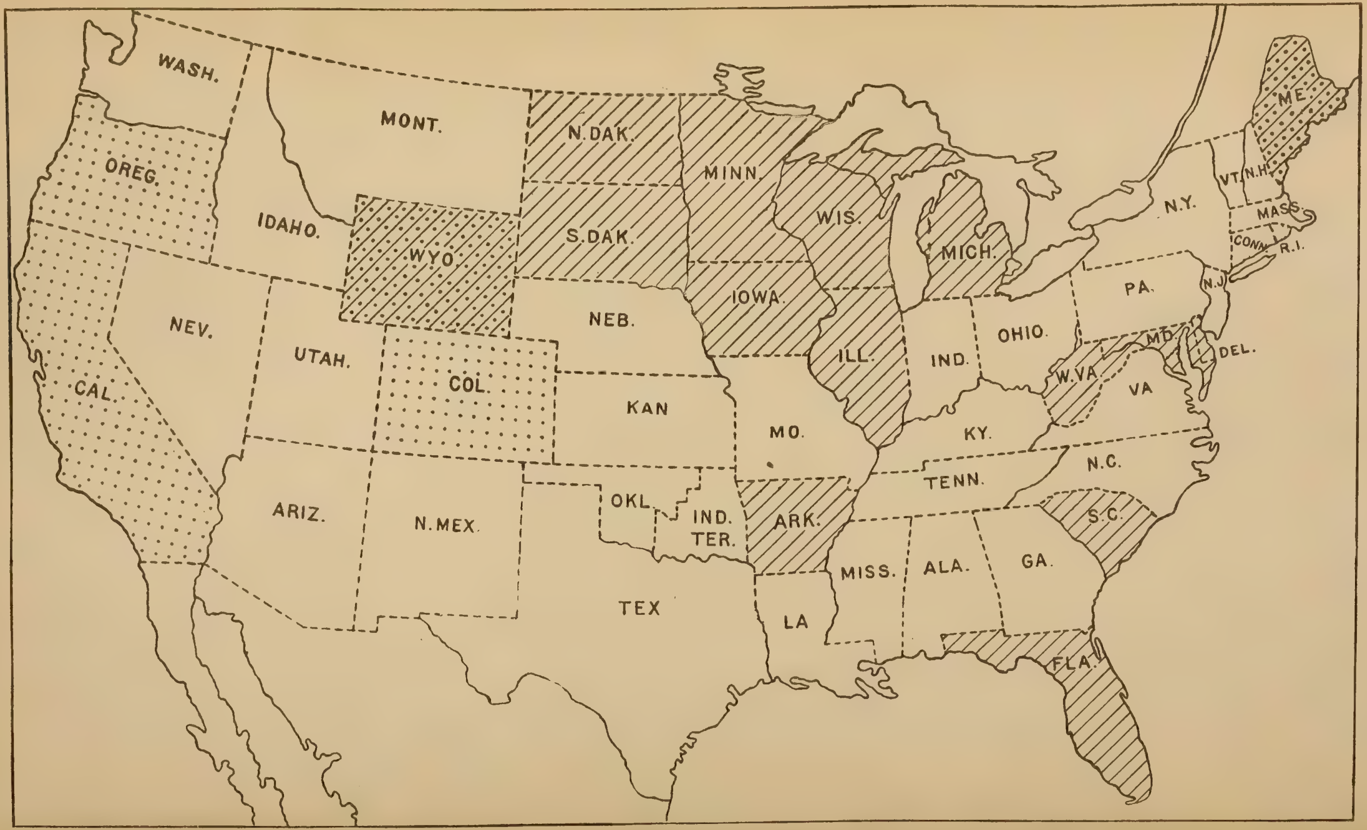
State.	Killing for sale prohibited,	Sale prohibited at all times.
Alabama	Deer, squirrel, quail, partridge, grouse, pheasant, wild turkey, woodcock.	Deer, squirrel, quail, partridge, grouse, pheasant, wild turkey, woodcock, killed or trapped within the State.
Arizona		Deer, elk, antelope, mountain sheep, mountain goat (or hides of any of said animals), wild turkey; or quail, partridge, grouse, taken by net, trap, or pound.
California		Deer, elk, antelope, mountain sheep (or hides of said animals, except those taken in Alaska or foreign countries); quail, partridge, grouse, taken by net, trap, or pound.
Connecticut		Quail, partridge, woodcock, taken by trap, snare, or net.
Delaware		Buying quail, partridge, pheasant for sale prohibited.
Florida		Deer, deer hides.
Idaho		Hides of deer, elk, moose, caribou, antelope, mountain sheep, mountain goat; quail, partridge, grouse, prairie chicken, sage hen, pheasant, Mongolian pheasant, duck, goose, swan.
Illinois		Squirrel (gray, red, fox, black), quail, ruffed grouse (pheasant), pinnated grouse (prairie chicken), wild turkey killed within limits of State; or any deer, pheasant (ring-neck, Mongolian, green Japanese, English, copper, Soemmering, tragopan, silver, golden), cacubis, chucker partridge, sand grouse, black India partridge.
Indiana	Quail, ruffed grouse, pinnated grouse.	Quail, ruffed grouse, pinnated grouse killed within the State; or any quail, pheasant, prairie chicken, wild duck not killed by shooting.
Indian Territory (Chickasaw Nation).	Deer, antelope, quail, prairie chicken, wild turkey, or other game.	
Iowa	Quail, ruffed grouse, pinnated grouse (prairie chicken), pheasant, woodcock.	
Kansas		Quail, partridge, grouse, pinnated grouse (prairie chicken), pheasant, dove (buying also prohibited).
Maine		Deer, moose, or game birds for shipment beyond limits of State.
Maryland:		
Anne Arundel		Quail, partridge, pheasant, woodcock.
Frederick		Squirrel, partridge, pheasant, woodcock, taken in county for sale.
Montgomery		Partridge, pheasant, wild turkey, for export.
Washington		Deer, squirrel, rabbit, partridge, pheasant, wild turkey, taken in county.
Wicomico	Quail or partridge	Quail or partridge for export (both counties considered as one territory.
Worcester		
Massachusetts		Ruffed grouse, woodcock, until 1903.
Minnesota		Ruffed grouse.

Market hunting and sale prohibited by State laws—Continued.

State.	Killing for sale prohibited.	Sale prohibited at all times.
Montana		Deer, elk, moose, antelope, bison, buffalo, mountain sheep, mountain goat, quail, partridge, grouse, prairie chicken, fool hen, sage hen, pheasant, Chinese pheasant, wild duck, goose, brant, swan.
New Mexico		Deer, elk, antelope, mountain sheep, ibex, mountain goat, quail, partridge, grouse, prairie chicken, pheasant, wild turkey, killed within the Territory.
Ohio	Squirrel, quail, ruffed grouse (pheasant), prairie chicken, Mongolian, English, or ring-necked pheasant, wild turkey, woodcock.	Squirrel, quail, ruffed grouse (pheasant), prairie chicken, Mongolian, English, or ring-necked pheasant, wild turkey, woodcock, killed within the State.
Oregon	Deer, moose, mountain sheep, quail, bobwhite, grouse, pheasant (Mongolian, silver, golden, copper, or green Japanese until 1902), jacksnipe, wild duck, goose, swan, or other wild fowl.	Deer, moose, mountain sheep (buying of hides of said animals prohibited); quail, bobwhite, grouse, pheasant (Mongolian, silver, golden, copper, or green Japanese), until 1902.
Pennsylvania	Deer, elk, quail, partridge, grouse, pheasant, wild turkey, woodcock.	Deer, elk, quail, partridge, grouse, pheasant, wild turkey, woodcock, taken in the State.
Rhode Island		Pheasant (not ruffed grouse).
South Carolina		Quail or partridge taken in the State before 1905.
South Dakota		Deer, elk, antelope, buffalo, mountain sheep.
Tennessee	Deer, quail, or partridge	
Texas		Deer, antelope, quail (partridge), grouse, prairie chicken (pinnated grouse), Mongolian or English pheasant, turkey, plover, snipe, jacksnipe, killed within the State.
Washington		Elk, moose, caribou, killed within the State; deer, antelope, mountain sheep, mountain goat (or hides of deer, elk, moose, or caribou), quail, partridge, grouse, prairie chicken, sage hen, ptarmigan, pheasant.
Wyoming	Deer, elk, moose, antelope, mountain sheep, mountain goat.	Purchase of hides or horns of deer, elk, moose, antelope, mountain sheep, mountain goat, prohibited.

LICENSES FOR HUNTING OR SHIPPING GAME.

In some sections of the United States, notably in Missouri, the privilege of hunting is not extended to nonresidents, and in fifteen States licenses must be secured before nonresidents may hunt certain game or may hunt at all. In several of the latter, a like restriction is imposed on residents, but the fees are usually very much smaller (often merely nominal) in the case of citizens of the State. Thus in North Dakota and Michigan the fee for residents is 75 cents, while that for nonresidents is $25. In Minnesota 25 cents and $25 are the respective charges for licenses to shoot big game. In Wyoming the same distinction is observed in the issue of 'gun licenses' for hunting big game, residents being charged a fee of $1, and required to secure licenses only for shooting in counties other than those in which they reside, while nonresidents pay $40 for the privilege of hunting anywhere within the State. Minnesota has a special license with a fee of $25 for nonresidents from States that issue nonresident licenses; these States are shown in the table following. Licenses are generally given only for the season, and many of them are not transferable. In five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CONN.
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MAP SHOWING STATES IN WHICH LICENSES ARE REQUIRED FOR HUNTING OR SHIPPING GAME.

Fifteen States (shaded) require nonresidents to procure hunting licenses. Five States (dotted) issue licenses or permits to export game for certain purposes. For details, see pages 42–44.

States, Florida, Illinois, Iowa, Maryland, and West Virginia, they are good only in a single county, and the fees for these county licenses vary from $5 to $25. In Maryland there is much variation, as each county is subject to a separate law; Allegany, Anne Arundel, Calvert, Frederick, Montgomery, Washington, Wicomico, and Worcester counties have no license laws. In some States licenses are required only for hunting certain kinds of game. Thus, in Michigan, they are issued only for the hunting of deer, in Maine for deer and moose, and in Florida for deer, quail, and turkeys. In part of Dare County, N. C., license fees of $25 are required of club houses before members may shoot wild fowl.[1] In Illinois, Iowa, Maine, and Wisconsin licenses carry with them the privilege of shipping out of the State a limited amount of game, but generally require that it shall be properly marked or accompanied by the owner. In Maine dealers are obliged to secure licenses before they can sell deer or buy, sell, or tan deer skins. California, Colorado, and Oregon issue special permits upon application, allowing shipment of game out of the State for breeding purposes, but in Oregon this permit is issued only on certification that the birds were bred in confinement. It might be well if the practice of issuing permits in the case of birds intended for propagation were more general. It is not in conflict with the spirit of non-export laws, and under State supervision will hardly interfere with their proper enforcement, while, on the other hand, it may materially assist in obtaining a supply of birds for restocking covers in other States.

Licenses for hunting or shipping game.

State.	Kind of license.	Fee.	By whom issued.	Remarks.
Arkansas	Nonresident	$10.00	County clerk	
California	Propagation		Board of fish commissioners.	Permits export of live animals or birds.
Colorado	Export	5-10	State game and fish commissioner.	Storage, $1; importation, $1; park license, $1—$100.
Delaware	Nonresident	5.00	Delaware Game Protective Association.	$2 for each subsequent year.
Florida	Nonresident	10.00	Clerk circuit court of county.	County license for deer, quail, and turkeys. Non-transferable.
Illinois	Nonresident	10.50	Secretary of state	County license. Expires June 1. Permits export of 25 birds from State.
Iowa	Nonresident	10.50	County auditor	County license. Expires January 1. Permits export of 25 birds.
Maine	Nonresident	6.00	Commissioners of Inland Fisheries and Game.	Permits killing of 1 deer in certain counties.
	Resident	4.00	Commissioners of Inland Fisheries and Game.	Permits killing of 1 deer in certain counties.
	Camp keeper	5.00	Commissioners of Inland Fisheries and Game.	
	Guide (resident).	1.00	Commissioners of Inland Fisheries and Game.	$20 for nonresidents.
	Game		Commissioners of Inland Fisheries and Game.	Moose, $5; deer, $–; pair of game birds, 50 cents. Permits shipping home or to hospital in State.

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[1] But any citizen of the county may obtain a 'non-residence license' on payment of $10. (Too local for insertion in table of licenses.)

Licenses for hunting or shipping game—Continued.

State.	Kind of license.	Fee.	By whom issued.	Remarks.
Maine	Deer sale		Commissioners of Inland Fisheries and Game.	In cities of more than 3,000 inhabitants, $5; in other places, $3; or, per deer, in discretion of commissioners, 50 cents.
	Deer skin	5.00	Commissioners of Inland Fisheries and Game.	Permits buying, selling, or tanning.
Maryland	Nonresident			Baltimore, Caroline, Carroll, Cecil, $10 (wild waterfowl); Charles, $5; Dorchester, Garrett, $25 (nontransferable); Harford, $10; Howard, Kent, $15, if invited by land owner, $5; Prince George, Queen Anne, St. Mary,[1] Somerset, $10 (unless accompanied by resident); Talbot, $9.50.
	Export			Queen Anne (for sale).
Michigan	Resident	.75	County clerk	Per season. Permits killing and transporting deer.
	Nonresident	25.00	County clerk	Per season. Permits killing and transporting deer.
Minnesota	Special nonresident.	25.00	Board of game and fish commissioners.	Limited to 1 year. Includes animals and birds, and applies only to citizens of States having restrictive laws against nonresidents.
	Nonresident	25.00	County auditor	For 1 year from date of issue. Deer, caribou, elk, and moose.
	Resident	.25	County auditor	For 1 year from date of issue. Deer, caribou, elk, and moose.
North Dakota	Nonresident	25.00	County auditor	Expires December 31.
	Resident	.75	County auditor	Expires December 31. Not required for hunting by citizen on his own lands.
Oregon	Propagation		Game and forestry warden	Live game birds bred and raised in confinement.
South Carolina	Nonresident	25.00	County treasurer	
South Dakota	Nonresident	10.00	County treasurer	Nontransferable.
West Virginia	Nonresident	26.00	Clerk of county court	County license for 1 year. Nontransferable.
Wisconsin	Nonresident	26.00	Secretary of state	All game, including deer. Permits export of 2 deer and 50 birds.
	Nonresident	11.00	Secretary of state	All game except deer.
	Resident	1.00	County clerk	All game. Permits transportation of 2 deer and 50 birds.
Wyoming	Nonresident	40.00	Justice of the peace	For 1 season. Big game.
	Resident	1.00	Justice of the peace	For 1 season. Big game. Not required for county of residence.
	Export		Justice of the peace	For shipment of carcasses, heads, antlers, scalps, or skins taken in open season.

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[1] Licenses not required for shooting or trapping certain waterfowl on Patuxent in case of citizens of St. Mary, Prince George, Charles, Anne Arundel, and Calvert counties.

II.—FEDERAL AND STATE LAWS REGULATING TRANSPORTATION AND SALE OF GAME.

The last forty years have witnessed a steady development in laws relating to game. In 1864 only 18 States and the District of Columbia had enacted such legislation; in 1874 this number had increased to 24; and at the present time every State and Territory has restrictive measures of some sort on its statute books. The earlier laws were concerned chiefly with fixing seasons and methods of capture, but of late, markets have come to be regarded as the chief factor in game destruction and more attention has been given to the restriction of export and sale. The importance of the question of transportation has become so great as to receive consideration from Congress, and during the present year a Federal law has been enacted which prohibits interstate commerce in game killed in violation of local laws.

Not only have the regulations concerning capture, transportation, and sale increased in number and complexity, but there is a growing tendency toward uniformity in the different State statutes, and various principles are gradually receiving more general recognition. Prominent among these is the principle of State ownership of game, which has been stated as follows:

"The wild game within a State belongs to the people in their collective sovereign capacity. It is not the subject of private ownership except in so far as the people may elect to make it so, and they may, if they see fit, absolutely prohibit the taking of it, or traffic and commerce in it, if it is deemed necessary for the protection or preservation of the public good."[1] This principle, as thus defined by the supreme court of California, has been upheld by the supreme court of Minnesota and by the Supreme Court of the United States. It forms the foundation of all modern legislation affecting trade in game. Every State and Territory in the Union, except Georgia, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, and Virginia, deems it "necessary for the protection or preservation of the public good" to prohibit traffic and commerce in game to a greater or lesser extent. And two of the excepted States, Missouri and Nebraska, have until recently had laws of this kind.

It is important to note that not only is the killing of game a privilege and not a right, but that the ownership of game differs from that of other property in that even after it has been reduced to possession it is subject to certain restrictions. On this principle are based the nonexport laws now in force in 40 States; the Massachusetts statute,[1] which prohibits sale during close seasons of game artificially propagated upon private lands, in spite of the fact that such game is declared by the law to be the exclusive property of the person propagating it, and also the statutes of Illinois,[2] Minnesota,[3] and Wisconsin,[4] which declare that possession of fish or game by any person at any time, whether taken within or without the State, shall be deemed a consent of such person that the title shall remain in the State for the purpose of regulating the use and disposition of such fish or game. The qualified character of private ownership of game is thus asserted by the Supreme Court of the United States:

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[1] Ex parte Maier, 103 California, 476.

> The power of a State to protect by adequate police regulation its people against the adulteration of articles of food, * * * although in doing so commerce might be remotely affected, necessarily carries with it the existence of a like power to preserve a food supply which belongs in common to all the people of the State, which *can only become the subject of ownership in a qualified way, and which can never be the object of commerce except with the consent of the State* and subject to the conditions which it may deem best to impose for the public good.[5]

Matters connected with the killing of game, as regulated by game laws, may be grouped under three heads: (1) Manner of capture, (2) time of capture, and (3) object of capture.[6] Under the first head may be included prohibitions against pursuing deer with hounds, netting quail, killing birds before sunrise or after sunset, killing wild fowl with swivel guns or pursuing them with steam or naphtha launches, and like regulations which are so common and so similar in their restrictions that a detailed statement by States is unnecessary. Under the second head come close seasons, absolute protection (as in the case of insectivorous birds), protection for terms of years, and regulations against killing birds on certain days of the week. The statutes covering these points are so varied and are subject to such frequent change that no attempt has been made to compile them, but the regulations now in force are summarized and tabulated on pp. 18–29. The most important provisions under the third head are those which make it unlawful to kill big game for hides, or to capture or kill any game for sale, or for shipping beyond the limits of the county or State. These are the topics which properly come within the scope of this bulletin, and the sections which relate to them are quoted in full. For laws protecting birds other than game birds, see Bulletin No. 12 of the Biological Survey, U. S. Department of Agriculture.

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[1] Acts of 1884, chap. 308.

[2] Laws of 1899, p. 227, sec. 11.

[3] Gen. Laws of 1897, chap. 221, sec. 9.

[4] Laws of 1899, chap. 312, sec. 26.

[5] Geer *v.* Conn., 161 U. S., 535.

[6] In some of the States certain facts are declared to constitute *prima facie* evidence of violation of law. Among these may be mentioned possession of game without license in Colorado, or out of season in Illinois, Iowa, Kansas, Maryland (most counties), Michigan, Minnesota, Montana, New Hampshire, New Mexico, New York, Oklahoma, Oregon, Texas, Utah, and Washington; and receipt of game for shipment in Connecticut, Maine (unless properly tagged), Ohio, South Dakota, Vermont, West Virginia, and Wisconsin.

FEDERAL LAW.

Those sections of the act of May 25, 1900, commonly known as the Lacey Act, which relate to the sale and transportation of game are here given in full for the information of shippers and dealers.

AN ACT to enlarge the powers of the Department of Agriculture, prohibit the transportation by interstate commerce of game killed in violation of local laws, and for other purposes.

SEC. 3. That it shall be unlawful for any person or persons to deliver to any common carrier, or for any common carrier to transport from one State or Territory to another State or Territory, or from the District of Columbia or Alaska to any State or Territory, or from any State or Territory to the District of Columbia or Alaska, any foreign animals or birds the importation of which is prohibited,[1] or the dead bodies or parts thereof of any wild animals or birds, where such animals or birds have been killed in violation of the laws of the State, Territory, or District in which the same were killed: *Provided*, That nothing herein shall prevent the transportation of any dead birds or animals killed during the season when the same may be lawfully captured, and the export of which is not prohibited by law in the State, Territory, or District in which the same are killed.

SEC. 4. That all packages containing such dead animals, birds, or parts thereof, when shipped by interstate commerce, as provided in section one of this act, shall be plainly and clearly marked, so that the name and address of the shipper and the nature of the contents may be readily ascertained on inspection of the outside of such packages. For each evasion or violation of this act the shipper shall, upon conviction, pay a fine of not exceeding two hundred dollars; and the consignee knowingly receiving such articles so shipped and transported in violation of this act shall, upon conviction, pay a fine of not exceeding two hundred dollars; and the carrier knowingly carrying or transporting the same shall, upon conviction, pay a fine of not exceeding two hundred dollars.

SEC. 5. That all dead bodies, or parts thereof, of any foreign game animals, or game or song birds, the importation of which is prohibited, or the dead bodies, or parts thereof, of any wild game animals, or game or song birds transported into any State or Territory, or remaining therein for use, consumption, sale, or storage therein, shall upon arrival in such State or Territory be subject to the operation and effect of the laws of such State or Territory enacted in the exercise of its police powers, to the same extent and in the same manner as though such animals and birds had been produced in such State or Territory, and shall not be exempt therefrom by reason of being introduced therein in original packages or otherwise. This act shall not prevent the importation, transportation, or sale of birds or bird plumage manufactured from the feathers of barnyard fowl.

Approved May 25, 1900.

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[1] Mongoose, flying fox, English sparrow, and starling.

STATE LAWS.

The following digest of the laws of the various States relates chiefly to the transportation and sale of game. Sections which contain *prohibitions against transportation and sale merely during close seasons are omitted*, since they are so common that their repetition seems unnecessary. Hence no extracts will be found from the laws of the District of Columbia, Georgia, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, or Virginia. As a rule the statutes are quoted verbatim, but in some cases abstracts only are given, and these are placed in brackets.

ALABAMA.

General Laws of 1899, pp. 77-83.

SEC. 5. * * * It shall be unlawful at any period or season of the year to kill, entrap, or pursue with intent to kill or entrap any deer, fawn, wild turkey, pheasant, grouse, quail, partridge, woodcock or squirrel, in any part of this State, for the purpose of selling the same. It shall be unlawful for the proprietor, manager, clerk or agent of any market, or other person, firm or corporation, to purchase, sell or expose for sale, any deer, fawn, wild turkey, pheasant, grouse, quail, partridge, woodcock or squirrel, killed or entrapped within this State. That it shall be unlawful for the proprietor, manager, clerk or agent of any market, or other person, firm or corporation, to purchase for the purpose of again selling the same any deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock killed or entrapped within this State. Whosoever shall offend against any of the provisions of this section, shall, on conviction, be fined not less than one hundred dollars for every deer, fawn, so taken, purchased or sold, and twenty-five dollars for every wild turkey, pheasant, grouse, quail, partridge or woodcock so taken, purchased or sold, or by sentence to imprisonment in the county jail for a period of one day for each dollar of penalty imposed.

SEC. 6. * * * That no person or persons, company or corporation, or the agent or employee thereof, shall at any time, catch, take or kill, or have in his, her or its possession or under his, her or its control, any of the birds or game mammals of this State, the killing of which at any or all times is prohibited by the laws of this State, with intent to ship or remove the same beyond the limits of this State, or with intent to aid in the shipment or removal thereof out of this State; and it shall not be lawful for any person or persons, railroad company, express company, stage driver, or any company or corporation, or person or persons, acting in the capacity of a common carrier, their officers or employees, to knowingly receive for transportation or transport or remove beyond the limits of the State, any of the game birds or game mammals mentioned in this act. [Penalty, $50-$100 for each offense.]

SEC. 14. * * * Provided, the provisions of this act shall not apply to the counties of Hale, Tuscaloosa, Marengo, Wilcox, Marion, Greene, Pickens, Coosa, Clay, Choctaw, Calhoun, Limestone, Clarke, Washington, Chambers, Lawrence, Coffee, Autauga, St. Clair, Franklin, Geneva, Walker, Randolph, Lowndes, Pike, Lauderdale, Butler, Bullock, Dale, Henry, Russell, Cleburne, Lee, Winston, Hale, Blount, Baldwin, Dallas, Chilton, Talladega, Escambia, Elmore, Lamar, Sumter, Fayette, De Kalb, Mobile, Bibb, Cherokee, Etowah, Marshall, Barbour, Jefferson, Tallapoosa, Shelby, Crenshaw, Colbert, Conecuh and Jackson, and it shall not apply to Montgomery County except in so far as game birds and mammals are concerned.

Approved February 8, 1899.

ARIZONA.

Acts of 1897, No. 41, pp. 78–80.

SEC. 8. Every person who, in the Territory of Arizona, shall at any time sell, or offer or expose for sale, the hide or meat of any deer, elk, antelope, mountain sheep, mountain goat, or the carcass of any wild turkey, shall be guilty of a misdemeanor.

SEC. 9. Every person who shall buy, sell, offer, or expose for sale, transport, or carry, or have in his possession, any deer or antelope, or any deer or antelope hide or pelt, from which the evidence of sex has been removed, shall be guilty of a misdemeanor.

SEC. 11. Every person who, in the Territory of Arizona, shall at any time net, trap or pound any quail, partridge or grouse; and every person who shall sell, transport, or give away, or offer or expose for sale or have in his possession any quail, partridge or grouse that has been snared, captured or taken in, or by any means of any net, trap or pound is guilty of a misdemeanor.

SEC. 12. Proof of possession of any quail, partridge or grouse which shall not show evidence of having been taken by means other than a net, trap or pound, shall be *prima facie* evidence in any prosecution for violation of the provisions of the preceding section, that the person in whose possession such quail, partridge or grouse is found, took, killed or destroyed the same by means of a net or pound.

SEC. 16. Any officer, agent, servant or employee of any railroad company, express company, or other common carrier or private individual, who shall have or receive for transportation, or who shall transport or assist in transporting, any of the game animals or birds mentioned in this act at or during the time when the killing or taking the same is prohibited or for transportation or carriage outside the limits of this Territory at any time, shall be guilty of a misdemeanor.

SEC. 17. Any person found guilty of a violation of any of the provisions of the various Sections of this Act shall, upon conviction, be fined in the sum of not less than twenty-five dollars nor more than one hundred dollars ($100.00) and costs, and, in default of the payment of such fine and costs shall be imprisoned in the county jail for a period not to exceed one day for each dollar of such fine and costs unpaid. * * *

Approved March 16, 1897.

ARKANSAS.

Sandels and Hill's Digest of the Statutes, 1897, Chap. LXIX, pp. 844–848.

SEC. 3414. * * * It shall be lawful to export from any part of this State, beavers, opossums, hares or rabbits, ground hogs or woodchucks, raccoons, squirrels, snipes or plovers, ducks and geese, when shipped openly.

SEC. 3415. It shall be unlawful for any person to export any * * * game from this State until April 12, 1901, and any person violating the provisions of this act shall be guilty of a misdemeanor, and shall be fined, upon conviction, in any sum not less than $25, nor more than $50.[1]

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[1] The circuit court of Craighead County has held that this does not prevent sportsmen from carrying with them, out of the State, game which they may have killed. (See Forest and Stream, Nov. 17, 1900, p. 387.)

SEC. 3416. It shall be unlawful for any railroad company, steamboat, express company, or any other common carrier, to take for carriage any fish or game consigned to points beyond the limits of this State.

SEC. 3417. All such common carriers may refuse to receive any package which they may suppose contains fish or game designed for export, and may cause said package to be opened, or may satisfy themselves in any other way that said package does not contain game or fish.

SEC. 3418. Any common carrier violating the provisions of this act, shall be guilty of a misdemeanor and upon conviction shall be fined in any sum not less than $50, nor more than $200.

SEC. 3434. It shall be unlawful for any person to purchase, have in possession or expose for sale, any of the birds or game mentioned in section 3431 [deer, quail, or Virginia partridge, pinnated grouse, or prairie chicken, wild turkey] during the season when the catching, killing, or injuring thereof is by this act prohibited.

SEC. 3435. It shall be unlawful for any railroad company, express company, steamboat company, or other company, or corporation, or private person, to have in possession or receive for transportation or carriage, or for any other purpose whatsoever, any of the game or birds mentioned in section 3431, during the season when the killing, catching or injuring the same is prohibited. (See p. 18.)

SEC. 3436. [Violation of any of the provisions of this act a misdemeanor, punishable by a fine $3–$10 for each bird or for each nest of eggs, and $10–$20 for each deer, together with costs of prosecution.]

SEC. 3440. It shall be unlawful for any common carrier or individual to carry as freight or otherwise any pinnated grouse, commonly called prairie chickens, either within or without this State, for a term ending April 12, 1901.

SEC. 3441. Any common carrier or individual who shall violate the preceding section, shall be subject to a fine of not less than $25, nor more than $50, for each pinnated grouse, commonly called prairie chickens, which they shall ship or carry as above specified in this act, either dead or alive.

CALIFORNIA.

Penal Code, 1897, pp. 216–221.

SEC. 626. * * * Every cold-storage company, person keeping a cold-storage warehouse, tavern, or hotel-keeper, restaurant, or eating-house keeper, marketman, or other person, who shall buy, sell, expose or offer for sale, or give away, or have in his possession, any quail, bobwhite, partridge, robin, grouse, dove, pheasant, wild duck, or rail, during the time it shall be unlawful to kill such birds; * * * every person who shall at any time buy, sell, or offer for sale the hide or meat of any deer, elk, antelope, or mountain sheep; every person who shall buy, sell, offer, or expose for sale, transport or carry, or have in his possession, the skin, hide, or pelt of any deer from which the evidence of sex has been removed, is guilty of a misdemeanor; provided, however, that the right of possession for the purpose of propagation shall first be obtained by a permit in writing, from the Board of Fish Commissioners of the State of California. Any person found guilty of a violation of any of the provisions of this section, shall be fined in a sum not less than twenty dollars or more than five hundred dollars, or be imprisoned in the county jail in the county in which the conviction shall be had, not less than ten days or more than one hundred and fifty days, or be punished by both such fine and imprisonment. It shall be no defense in a prosecution for a violation of any of the provisions of this section that the birds or animals were taken or killed outside this State; provided, however, that nothing in this section shall be held to apply to the hide of any of said animals taken or killed in Alaska or any foreign country.

SEC. 627. * * * Every railroad company, express company, transportation company, or other common carrier, their officers, agents, and servants, and every other person who shall transport, carry, or take out of this State, or who shall receive for the purpose of transporting from the State, any deer, deerskin, buck, doe, or fawn, or any quail, partridge, pheasant, grouse, prairie chicken, dove, or wild duck, transport, carry, or take from the State, or receive for the purpose of transporting from this State, any such animal or bird, shall be guilty of a misdemeanor: provided, that the right to transport for the purposes of propagation shall first be obtained by permit, in writing, from the Board of Fish Commissioners of the State of California. Any person found guilty of a violation of any of the provisions of this section, shall be fined in a sum not less than twenty dollars, or more than five hundred dollars, or be imprisoned in the county jail in the county in which the conviction shall be had, not less than ten nor more than one hundred and fifty days, or be punished by both such fine and imprisonment.

Amendment approved March 9, 1897; Stats. 1897, chap. 89.

SEC. 631. Every person who shall at any time net or pound, cage or trap, any quail, partridge, or grouse, and every person who shall sell, transport, or give away, or offer, or expose for sale, or have in his possession any quail, partridge, or grouse that has been snared, captured, or taken by means of any net or pound, cage or trap, whether taken in the State of California, or shipped into the State from any other State, Territory, or foreign country, is guilty of a misdemeanor; provided, the same may be taken for the purposes of propagation, written permission having been first obtained from the game warden of the county wherein said birds are to be taken. Proof of possession of any quail, partridge, or grouse, which shall not show evidence of having been taken by means other than a net or or pound, shall be prima facie evidence in any prosecution for violation of the provisions of this section that the person in whose possession such quail, partridge, or grouse is found, took, killed, or destroyed the same by means of net or pound.

Amendment approved March 27, 1895; Stats. 1895, p. 260.

COLORADO.[1]

Session Laws of 1899, chap. 98, pp. 188–217.

DIVISION A. SEC. 16. All game and fish now or hereafter within this state not held by private ownership, legally acquired, and which for the purposes of this act shall include all the quadrupeds, birds and fish mentioned in this act, are hereby declared to be the property of the state, and no right, title, interest or property therein can be acquired or transferred, or possession thereof had or maintained except as herein expressly provided.

DIVISION B, SEC. 1. No person shall at any time of the year, or in any manner, pursue, take, wound or kill any bison, buffalo, elk, deer, antelope, mountain sheep or beaver, or any of the following wild birds, viz: Turkey, prairie chicken, sage chicken, grouse, quail, pheasant, partridge, ptarmigan, duck, goose, brant, swan, crane, water fowl, pigeon, dove, snipe or curlew. * * * or sell, offer or expose for sale or have the same in possession, except as permitted by this act. * * *

SEC. 3. No person shall have in possession or transport the carcass of any game quadruped or any considerable portion of such carcass unless the same has thereon the natural evidence of its sex sufficient to enable such sex to be readily determined by ordinary inspection.

DIVISION D, SEC. 11. When any person lawfully in possession of game or fish shall desire to transport the same within this state, the transportation of which is not herein otherwise provided for, or out of this state, the commissioner may, upon being satisfied that the possession and transportation is not in violation of the spirit of this act, grant a permit therefor, and thereafter during the period of ten days after its date, such transportation shall be lawful between the points therein named. * * *

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[1] For full regulations regarding sale of game taken in public and private parks or imported from other States, see Divisions C, secs. 16–21; and D, secs. 4–8.

SEC. 12. No railroad company, express company, stage company or other public carrier, messenger, baggage man, or person in charge of any public conveyance, nor any agent thereof, shall receive or store for transportation, or transport into, or within, this State, any game or fish except as follows, namely:

(1) When there is attached thereto a proper and valid certificate or permit signed by the commissioner, or having a facsimile of his signature thereon and on its face authorizing transportation of the article named therein, and during the period therein stated.

(2) At any time of year when the same is shipped from a private park or lake and has attached thereto a proper and valid invoice as required in Division C of this act.

(3) At any time of year when the same is in charge of the commissioner, or some person acting for him and under his written authority, or an officer having seized the same under the provisions of this act, or a game or fish commissioner or warden of the United States or some other State, Territory or foreign country.

(4) At any time of year when the same has been seized and sold by an officer and has attached thereto an invoice as provided in this division, and for thirty days after the date of such invoice.

(5) When there is attached thereto a proper and valid importer's invoice, authorizing transportation of the article therein named and during the period therein stated.

(6) At any time of the year when the same are small fry or fish eggs for stocking purposes.

(7) At any time of the year when the same is being transported from some other State or Territory into this State in conformity with section 2 or 3 of this division.

(8) During the open season therefor and for five days thereafter when presented for shipment in lawful number or quantity. [See pp. 18, 34.]

SEC. 13. Game or fish may be transported out of this State only when accompanied by a permit from the commissioner authorizing the same, as provided in section 11 of this division, or when being transported from some other State or Territory where taken or killed, through this State to some other State or Territory.

SEC. 14. Whenever any game or fish is presented for transportation or transported in a box, barrel, package, or other covering, so the game or fish is not plainly visible, the consignor shall put on the outside of such covering a plain mark or label indicating the true contents, and the proper invoice, certificate, or permit, when one is required, shall be attatched [attached] to the outside of the covering.

SEC. 15. Nothing herein shall make such carrier liable for transportation of game or fish when the same is transported without charge or waybill and in the possession of a passenger; but such fact shall not exempt the same from seizure, if unlawfully taken, killed, held in possession, or transported.

DIVISION G, SEC. 1. Every attempt to violate any provision of this act shall be punishable to the same extent as an actual violation thereof, and any such attempt or violation by an agent, clerk, officer, or employe, while acting for a corporation, shall render such corporation liable also, and an accessory may in all cases be prosecuted and punished as a principal.

SEC. 4. Every person or officer violating any of the provisions of this act, * * * shall be guilty of a misdemeanor and be punished by a fine of not less than $10 nor more than $500, or by imprisonment in the county jail not less than ten days nor more than six months, or by both such fine and imprisonment.

Approved, April 27, 1899.

CONNECTICUT.

General Statutes 1888, Title XLI, Chap. CLII, pp. 558–559.

SEC. 2540. Nothing in this chapter shall prevent any person from taking alive and keeping any species of game or bird hereinbefore mentioned [gray squirrel, quail, ruffed grouse, woodcock, sora, and insectivorous birds] for the purposes of domestication, or propagation, if it be done without committing a trespass upon the land of another.

SEC. 2545. Every person, not the owner or occupant under lease of the lands upon which said birds shall have been taken, nor a member of the family of such owner or occupant who shall sell or exchange, or offer or expose for sale or exchange, any partridge, quail, or woodcock which have been taken or killed by traps, snares, nets, or similar devices, shall be fined not more than ten dollars for each bird so sold, or exchanged, or offered or exposed for sale or exchange.

SEC. 2546. No person shall at any time kill any woodcock, ruffled grouse, or quail, for the purpose of conveying the same beyond the limits of this State; or shall transport, or have in possession with intent to procure the transportation beyond said limits, any of such birds killed within this State. The reception by any person within this State of any such bird or birds for shipment to a point without the State, shall be *prima facie* evidence that said bird or birds were killed within the State, for the purpose of carrying the same beyond its limits.

SEC. 2547. Any person violating any of the provisions of the preceding section shall be fined not less than seven nor more than fifty dollars.

DELAWARE.

Laws of 1891, Vol. XIX, chap. 137, pp. 268–269.

SEC. 1. (As amended by laws of 1893, chap. 654.) That from and after the passage of this act it shall be unlawful for any person or persons to ship, take, or carry away, or attempt to ship, take, or carry out of this State, any quail, partridge, robin, woodcock, or wild rabbit, dead or alive, for purposes of sale or otherwise. And it shall also be unlawful for any person who is a nonresident of this State to ship, take, or carry away, or attempt to ship, take, or carry away, any quail, partridge, robin, woodcock, Wilson or English snipe, or wild rabbit, dead or alive, from one county to another county in this State, for the purposes of sale or otherwise.

If any person shall ship, take, or carry away, or attempt to ship, take, or carry away, any birds or animals named in this act out of this State, or from one county to another county in this State, contrary to the provisions of this act, he shall be deemed guilty of a common nuisance, and upon conviction thereof before any justice of the peace in this State shall be fined five dollars for each and every bird or animal so shipped or taken or carried away, or so attempted to be shipped, or taken or carried away contrary to the provisions of this act, and upon failure to pay said fine and the costs of prosecution he shall be committed to the jail of the county in which such offense occurred for the period of thirty days, unless said fine and costs be sooner paid; one half said fine shall be paid into the treasury of the county and the other half to the informer.

Passed, April 20, 1891.

Laws of 1893, Vol. XIX, chap. 655, p. 802.

SEC. 3. That from and after the passage of this act it shall be unlawful for any person or persons within this State at any time to buy, for purposes of profit or sale, any partridge, quail, or pheasant, and all acts or parts of acts authorizing the issuing of licenses to dealers in said birds be and the same are hereby repealed as far as they relate to the buying of said birds. Any person or persons violating the provisions of this section shall be fined as prescribed in section 5, chapter 507, vol. 17, Laws of Delaware.

Passed May 4, 1893.

DISTRICT OF COLUMBIA.

[Prohibitions against sale refer only to close seasons. No prohibition against transportation.]

FLORIDA.

Laws of 1899, chap. 4784, p. 174.

SEC. 2. That no person or persons, firm or corporation shall sell, expose for sale, or have in his, her, its or their possession for sale at any time any wild deer, venison or deer hide and it shall be unlawful for any person or persons, firm or corporation to ship or transport any deer, venison or deer hide or hides in this State for sale at any time, and it shall be unlawful for any common carrier to transport any deer, venison or deer hide or hides in this State at any time to be sold. Any person or persons, firm or corporation violating the provisions of this section shall, upon conviction, be punished by a fine of not less than fifty dollars, nor more than two hundred dollars or be imprisoned in the county jail at hard labor not more than three nor less than one month.

SEC. 4. That any person or persons, firm or corporation who shall ship any deer hide or hides, venison, wild turkey, quail or partridge beyond the limits of the county in which the same was killed, shall, upon conviction, be deemed guilty of a misdemeanor and punished as prescribed in section one of this act [$25 to $100, or three to six months' hard labor]. And any common carrier, agent or employee of any such carrier, who shall receive for carriage or permit the carriage of any such deer, hide, venison, wild turkey, quail or partridge by said common carrier across any county line in this State shall, upon conviction, be punished as prescribed in Section one of this act; *Provided*, Hunting parties may take their own game home with them in this State, but not for sale.

Approved May 4, 1899.

GEORGIA.

[No general prohibitions against transportation or sale.]

IDAHO.

General Laws, 1899, pp. 429–431.

SEC. 11. It shall be unlawful for any person, or persons, or agents or employees of any association or corporation to buy or sell the hides of any of the animals mentioned in any of the preceding sections of this Act. [Deer, elk, moose, caribou, antelope, mountain sheep, mountain goat. Penalty, $50 to $100 for each animal.]

SEC. 19. It shall be unlawful for any person or persons, agent or employee of any association or corporation to buy or sell or to expose or offer for sale, any of the animals, birds, or fish, or any part or parts of any such animal, bird or fish protected by the provisions of this Act at any time of the year. [Animals and birds protected: Deer, elk, moose, caribou, antelope, mountain sheep, mountain goat, quail, partridge, pheasant, mongolian pheasant, grouse, prairie chicken, sage hen, duck, goose, swan.]

SEC. 20. If any person or persons, agent or employee of any association or corporation shall be found in possession of any of the animals, birds, or fish, or any part or parts of any of the animals, birds, or fish protected by this Act, between the dates within which the killing, taking, ensnaring, entrapping, or destroying of the same is declared to be unlawful, it shall be deemed prima facie evidence that such person or persons, agent or employee killed, ensnared, trapped, or destroyed the same in violation of this Act. *Provided*, That the provisions of this section shall not apply to persons having in possession for preservation any stuffed birds or animals, or heads or horns of animals not taken or killed in violation of the provisions of this Act or other game laws of the State of Idaho.

SEC. 21. It shall be unlawful for any railway, express company, stage line or other public carrier, or any of their agents or employees to receive or have in their possession for transportation any of the animals, birds, or fish, or any part or parts of any animals birds or fish protected by the provisions of this Act or other laws of this State, or to transport the same after the passage of this Act. Except, that nothing in this Act shall prevent shipping or transporting in any manner, mounted heads, or stuffed birds or animals to any point within the State: *Provided*, That such birds or animals were not killed in violation of this Act or other laws of the State, or that such heads or horns were not taken from animals taken or killed in violation of this Act or other laws of this State.

SEC. 26. Any person or persons, agent or employee of any association or corporation violating any of the provisions of section 19 and 21 of this Act, shall upon conviction thereof be fined in any sum not less than twenty-five nor more than seventy-five dollars, together with costs of suit.

Approved, March 13, 1899.

ILLINOIS.

Laws of 1899, pp. 224–227.

SEC. 2. It shall be unlawful for any person to buy, sell or have in possession any of the animals, wild fowl or birds mentioned in section 1 of this act [deer, wild turkey, pinnated grouse, ruffed grouse, prairie chicken, pheasant or partridge, quail, woodcock, dove, squirrel, snipe, plover, wild goose, duck, brant, or other waterfowl], at any time when the killing, trapping, netting and ensnaring of such animals, wild fowl or birds shall be unlawful which shall have been killed, entrapped, netted or ensnared contrary to the provisions of this act. And it shall further be unlawful for any person or persons at any time to sell or expose for sale, or to have in his or their possession for the purpose of selling, any quail, pinnated grouse or prairie chicken, ruffled grouse or pheasant, grey, red, fox or black squirrel or wild turkey that shall have been caught, ensnared, trapped or killed within the limits of this State. And it shall further be unlawful for any person, corporation or carrier to receive for transportation, to transport, carry or convey any of the aforesaid quail, pinnated grouse or prairie chicken, ruffled grouse or pheasant, squirrel, or wild turkey that shall have been caught, ensnared, trapped or killed within the limits of this State, knowing the same to have been sold, or to transport, carry or convey the same to any place where it is to be sold or offered for sale, or to any place outside of this State for any purpose, except such person have a license from this State so to do. And any person guilty of violating any of the provisions of this section shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be fined not less than twenty-five dollars nor more than one hundred dollars for each and every offense, and shall stand committed to the county jail not exceeding ten days until such fines and costs are paid: *Provided*, that the selling, exposing for sale, having in possession for sale, transporting or carrying and conveying, contrary to the provisions of this section, of each and every animal or bird forbidden herein, shall be deemed a separate offense.

SEC. 6. No person or persons shall sell, or expose for sale, or have in his or their possession for the purpose of selling or exposing for sale, any of the animals, wild fowls or birds mentioned in section one (1) of this act after the expiration of five (5) days next succeeding the first day of the period in which it shall be unlawful to kill, entrap or ensnare such animals, wild fowls or birds; nor shall any of such animals, wild fowls or birds be sold or offered for sale during the first two days of the open season. Any person so offending shall, on conviction, be fined and dealt with as specified in section one (1) of this act [penalty, a fine of $15 to $50 and costs of suit, or imprisonment not exceeding 10 days, for each offense; but the killing of each bird or animal shall be deemed a separate offense], and selling or exposing for sale, or having the same in possession for the purpose of selling or exposing for sale, any of the animals or birds mentioned in this section, after the expiration of the time mentioned in this section, shall be *prima facie* evidence of the violation of this act: *Provided*, that the provisions of this act shall not apply to the killing of birds by or for the use of taxidermists for preservation either in public or private collection, if so preserved: *Provided further*, that nothing contained in this section shall be construed as modifying or being in conflict with section two (2) of this act, or authorizing or legalizing the sale or exposing for sale, transportation or receiving for transportation, any of the animals, birds or game as therein prohibited: *And provided, also*, that inhabitants of villages and cities may receive game from other States, and expose and sell the same on the market in said villages and cities between the first day of October and the first day of February of the following year.

SEC. 7. The provisions of this act shall not be construed as applicable to any express company or common carrier, into whose possession any of the animals, wild fowl or birds herein mentioned shall come in the regular course of their business for transportation whilst they are in transit through this State from any place without this State where the killing and transportation of said animals, wild fowl or birds shall be lawful. But notwithstanding this provision, the having or being in possession of any such animals, wild fowl or birds as are mentioned in section one (1) upon any of the days upon which the killing, entrapping, ensnaring, netting, buying, selling, or having in possession any such animals, wild fowls or birds, shall be unlawful by the provisions of this act, shall be deemed and taken as *prima facie* evidence that the same was ensnared, trapped, netted or killed in violation of this act.

SEC. 11. The ownership of and title to all wild game and birds in the State of Illinois is hereby declared to be in the State, and no wild game or birds shall be taken or killed in any manner at any time, except the person so taking or killing shall consent that the title to said game shall be and remain in the State of Illinois for the purpose of regulating the use and disposition of the game after such taking or killing. The taking or killing of wild game or birds at any time or in any manner or by any person shall be deemed a consent of said person that the title to such game or birds shall be and remain in the State for said purpose of regulating the use and disposition of the same.

Approved April 24, 1899.

INDIANA.

Revised Statutes, 1897, pp. 360-363.

[SEC.] 2238. *Killing quail or ruffed grouse.* It shall be unlawful for any person to pursue or kill within this State any quail, ruffed grouse or pinnated grouse for purposes of sale, barter, traffic or removal from the State, or to sell, barter, keep, expose or offer for sale, or remove from this State any quail, ruffed grouse or pinnated grouse caught or killed in the State of Indiana.

[SEC.] 2239. *Penalty.* Whoever shall violate any of the provisions of section one of this Act [sec. 2238] shall upon conviction thereof be fined in the sum of one dollar for every quail, ruffed grouse, or pinnated grouse so unlawfully pursued, killed, sold, kept, exposed or offered for sale, or removed from this State.

[SEC.] 2253. *Carrying game.* Every agent or officer of any express company or railroad company, or any other person or persons, who receives or transports any game, whether deer, quails, pheasants, woodcock, wild duck, or prairie chickens, which shall have been killed, taken, or captured, or held in violation of the provisions of this Act, shall, upon conviction thereof, be fined in the sum of ten dollars for each deer, buck, doe, or fawn so received or transported, and the sum of two dollars for each quail, pheasant, prairie chicken, wild duck, or woodcock so received or transported.

[SEC.] 2254. *Selling game not shot.* Whoever sells, exposes to sale, or has possession of for the purpose of selling, any quail, pheasant, prairie chicken, or wild duck that has not been killed by shooting, shall be fined one dollar for each and every quail, pheasant, prairie chicken, or wild duck so sold, exposed to sale, or possessed for the purpose of selling.

[SEC.] 2255. *Carrying game beyond State.* It shall be unlawful for any railroad company, express company, or other common carrier, or officers, agents, or servants, or any other person or persons, to transport, carry, or take beyond the limits of this State, or to receive for the purpose of transporting, carrying, or taking beyond the limits of this State, any deer, buck, doe, or fawn, any quail, pheasant, wild duck, grouse, prairie chicken, or woodcock; and any such railroad company, express company, or common carrier, their agents, officers, or servants, or any other person or persons violating the provisions of this section, shall be fined in any sum not more than one hundred dollars nor less than ten dollars for each offense so committed.

INDIAN TERRITORY.

Revised Statutes U. S., 1878.

SEC. 2137. Every person, other than an Indian, who, within the limits of any tribe with whom the United States has existing treaties, hunts, or traps, or takes and destroys any peltries or game, except for subsistence in the Indian country, shall forfeit all the traps, guns, and ammunition in his possession, used or procured to be used for that purpose, and all peltries so taken; and shall be liable in addition to a penalty of five hundred dollars.

Laws of the Chickasaw Nation.[1] Act of September 23, 1896.

SEC. 2. * * * That no person shall kill, ensnare, net or trap any quail, prairie chicken, wild turkey, or any deer, antelope, or fawn, or other game, or fish, within the limits of the Chickasaw Nation to sell, or export to any State or Territory; and any person who shall export or ship any game killed or taken in the Chickasaw Nation out of said Nation or Territory, shall be punished as hereinafter provided for in this act.

SEC. 3. * * * That no person shall ensnare, net or trap any quail, prairie chicken, wild turkey, deer, antelope, fawn, fish or other game used for food within this nation, or have in possession any game named in the foregoing section for any purpose or any pretense whatever, except for food, and then when actually necessary for immediate use; and the reasonable necessities of the person killing the same. Any person violating the provisions of this section shall be punished as hereinafter provided for in this act.

SEC. 4. * * * That any person or persons found guilty of violating the provisions of this act, as specified in sections two and three, shall upon conviction thereof by the District Court of the Chickasaw Nation, be fined in any sum not less than twenty-five dollars, nor more than one hundred dollars, and be imprisoned in the National Jail not less than ten days nor more than one hundred days at the discretion of the Court trying the case for the first offense; and upon subsequent conviction for violating the provisions of this act, shall be both fined and imprisoned to the full extent provided for in this act.

Approved September 23, 1896.

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[1] While the act of June 28, 1898, commonly known as the Curtis Act, abolishes the tribal governments in the Indian Territory, an exception is made in Section 29 continuing those of the Chickasaw and Choctaw Nations in force until March 4, 1906. (30 Stat. L., 512.)

IOWA.

Annotated Code, 1897, Title XII, chap. 15, pp. 887–888.

SEC. 2552. *Killing for traffic.* Destroying eggs or nests. No person shall at any time, or at any place within this State, trap, shoot or kill for traffic any pinnated grouse or prairie chicken, woodcock, quail, ruffed grouse or pheasant; nor shall any one person shoot or kill during any one day more than twenty-five of either kind of said named birds; nor shall any one person firm or corporation have more than twenty-five of either kind of said named birds in his or their possession at any one time, unless lawfully received for transportation; or catch or take or attempt to catch or take, with any trap, snare or net any of the birds or animals named in the preceding section; or in any manner wilfully destroy the eggs or nests of any of the birds named in this and the preceding section. [18 G. A., ch. 193, §2; 17 G. A., ch. 156, §3.]

SEC. 2554. *Having in possession.* It shall be unlawful for any person, company or corporation to buy or sell, or have in possession, any of the birds or animals named in this chapter, during the period when the killing of such birds or animals is prohibited, except during the first five days of such prohibited period; and the possession by any person company or corporation of any such birds or animals during such prohibited period, except during the first five days thereof, shall be presumptive evidence of a violation of the provisions of this chapter relating to game. [17 G. A., ch. 156, §5.]

SEC. 2555. *Shipping out of State.* No person, company or corporation shall at any time ship, take or carry out of this State any of the birds or animals named in this chapter; but it shall be lawful for any person to ship to any person within this State any game birds named, not to exceed one dozen in any one day, during the period when the killing of such birds is not prohibited; but he shall first make an affidavit before some person authorized to administer oaths that said birds have not been unlawfully killed, bought, sold or had in possession, are not being shipped for sale or profit, giving the name and post-office address of the person to whom shipped, and the number of birds to be so shipped. * * * [17 G. A., ch. 156 §6.]

SEC. 2556. *Penalty.* If any person use any device, kill, trap, ensnare, buy, sell, ship, or have in his possession, or ship, take or carry out of the State, contrary to the provisions of this chapter, any of the birds or animals named or referred to herein, or shall wilfully destroy any eggs or nests of the birds named or referred to in the preceding sections, he shall be punished by a fine of ten dollars for each bird * * * so killed, trapped, ensnared, bought, sold, shipped, had in possession, destroyed, or shipped, taken or carried out of the State, and shall stand committed to the county jail for thirty days unless such fine and costs of prosecuting are sooner paid. [17 G. A., ch. 156, §7.]

SEC. 2557. *Receiving for transportation.* If any railway or express company or other common carrier, or any of their agents or servants, receive any of the fish, birds or animals mentioned or referred to in this chapter for transportation or other purpose, during the period hereinbefore limited and prohibited, or at any other time except in the manner provided in this chapter, he or it shall be punished by a fine of not less than one hundred nor more than three hundred dollars, or by imprisonment in the county jail for thirty days, or by both such fine and imprisonment.

KANSAS.

Session Laws of 1897, chap. 135, pp. 294–295.

SEC. 3. The having in possession, by any person or persons, company or corporation of any bird named in section one of this act [partridge, pinnated grouse or prairie chicken, grouse, quail, pheasant, oriole, meadowlark, robin, thrush, redbird, mockingbird, blue jay, turtledove, yellowhammer, or bluebird], excepting song birds, at any time when the bird so possessed is not permitted to be shot by the provisions of said section, shall be deemed *prima facie* evidence of a violation of the provisions of this act.

SEC. 6. It shall be unlawful for any person or persons, company or corporation, at any time, to buy, sell, barter, ship or offer for sale, barter or shipment, within the State of Kansas, any bird or birds named in section one of this Act. The having in possession by any person, company or corporation of any bird or birds named in section one of this act, except by a person who has lawfully killed the same, shall be deemed *prima facie* evidence of a violation of this act.

SEC. 7. It shall be unlawful for any railroad, express or transportation company or corporation, or any agent, employee or manager of such company to accept, within the State of Kansas, for shipment or transfer, any of the birds mentioned in section one of this act. The having in possession of any of the birds mentioned in the first section of this act by any such railroad, express or transportation company or corporation, or agent or employee or manager thereof, shall be deemed *prima facie* evidence of a violation of this act.

SEC. 8. Any person, or the manager, agent or employee of any company or corporation found guilty of a violation of any of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, before any court of competent jurisdiction shall be fined in a sum not less than five dollars nor more than one hundred dollars, for each and every offense, and costs, together with an attorney's fee of ten dollars, and shall be committed until such fine, costs and attorney's fee shall be paid.

Approved, March 13, 1897.

LOUISIANA.

[No general prohibitions against transportation or sale.]

MAINE.

Public Laws of 1899, chap. 42, pp. 35–44.

SEC. 11. * * * Nor shall any person or corporation carry or transport from place to place any of the birds mentioned in this section [wood duck, dusky or black duck, teal, gray duck, ruffed grouse or partridge, woodcock, quail, plover, snipe, and sandpipers], in close season, nor in open season unless open to view, tagged, and plainly labeled with the owner's name and residence and accompanied by him, unless tagged in accordance with section twenty-six of this chapter under the same penalty [$5 for each bird]. Any person, not the actual owner of such bird, who, to aid another in such transportation, falsely represents himself to be the owner thereof, shall be liable to the same penalty; nor shall any person or corporation carry or transport at any one time more than fifteen of any one variety of the birds above named as the property of one person under the same penalty. * * *

SEC. 12. * * * Whoever carries or transports from place to place, any of the birds named in this chapter during the period in which the killing of such bird is prohibited, forfeits five dollars for each bird so carried or transported.

SEC. 23. No person or corporation shall carry or transport from place to place any moose or deer, or part thereof, in close time, nor in open time unless open to view, tagged and plainly labeled with the name and residence of the owner thereof, and accompanied by him, under a penalty of forty dollars and costs of prosecution for each moose or deer so transported or carried; and any person not the actual owner of such game or parts thereof, who, to aid another in such transportation, falsely represents himself to be the owner thereof, shall be liable to the penalties aforesaid; and it shall be prima facie evidence that said game, that is being transported or carried in violation of this section, was illegally killed; but nothing herein shall apply to the transportation of moose or deer by any person or corporation, when such game is lawfully tagged in accordance with the provisions of section twenty-six of this chapter. Whoever lawfully kills a bull moose shall, while the same or any part thereof, is being transported, preserve and transport it with the evidence on the moose of the sex of the same. Whoever fails to comply with the provisions of this section shall forfeit to the State the moose or part thereof being transported, and pay a fine of three hundred dollars and costs of prosecution.

SEC. 24. All birds, fish, and game hunted, caught, killed, destroyed, bought, carried, transported or found in possession of any person or corporation, in violation of the provisions of this chapter and amendments thereto, shall be liable to seizure; and in case of conviction for such violation, such game shall be forfeited to the State, to be sold for consumption in this State only. Any person whose game or fish has been seized for violation of any game or fish law, shall have it returned to him on giving to the officer a bond with sufficient sureties, residents of the State, in double the amount of the fine for such violation, on condition that, if convicted of such violation, he will, within thirty days thereafter, pay such fine and costs. If he neglects or refuses to give such bond and takes the game or fish so seized, he shall have no action against the officer for such seizure, or for the loss of the game or fish seized.

SEC. 25. No resident of this State shall sell or give away any moose or deer or part thereof, or any game birds, to be transported or carried beyond the limits of this State, under a penalty of one hundred dollars for each and every moose, deer or part thereof, and one dollar for every game bird so sold or given away; and any person who shall buy any of the above-named animals or birds or parts thereof, to so transport them, or who shall transport them after buying the same or receiving the same as a gift, shall be subject to the same penalty.

SEC. 26. Any person who has lawfully killed a moose or a deer, except in September as heretofore provided, * * * or one pair of game birds, may send the same to his home or to any hospital in the State, without accompanying the same by purchasing of the duly constituted agent therefor a tag, paying for a moose five dollars, for a deer two dollars, * * * and fifty cents for a pair of game birds. The commissioners of inland fisheries and game may appoint agents in convenient localities who may sell these tags, under such rules and regulations as the commissioners may adopt. * * *

SEC. 27. Any marketman or provision dealer, having an established place of business in this State, may purchase and have in his possession at his said place of business not more than three deer, lawfully killed or destroyed, or any part thereof, at one time, and may sell the same at retail to his local customers, provided, however, that said marketman or provision dealer, shall have procured a license of the commissioners of inland fisheries and game to carry on said business of buying and selling deer as aforesaid: and provided further, that said marketmen shall record in a book kept for that purpose, and open to the inspection of inland fish and game wardens and the commissioners of inland fisheries and game, the name and residence of each person of whom he purchases any inland fish or game and the date of such purchase; and if any marketman or provision dealer shall violate the provisions of this section, he shall be fined five hundred dollars for each offense and be prohibited for five years thereafter from the benefits of this section. All marketmen or provision dealers licensed as aforesaid shall pay to the commissioners, in cities and towns of over three thousand inhabitants, five dollars annually, and three dollars in all other places; or instead of this fee, the commissioners may, at their discretion, issue licenses authorizing the retailing of deer as above specified, on payment of fifty cents for each deer retailed; said marketmen and provision dealers holding these licenses shall annually, on December fifteenth, make, sign, and send to the commissioners, under oath, a statement setting forth in detail the number of deer by them bought, and of whom bought, and the date of each purchase, during the time covered by their licenses; and whoever fails to make the report required in this section shall be subject to a penalty of one hundred dollars and costs.

SEC. 28. The commissioners may annually issue licenses to suitable persons to buy and sell, or tan, deer skins lawfully taken. Such persons shall keep a record of all deer skins purchased, of whom purchased, and the date of purchase, and shall report annually to the commissioners. The fee for such license shall be five dollars, to be paid to the commissioners and by them to the State treasurer; and whoever, licensed as aforesaid, unreasonably and willfully refuses to make such report, shall be punished by a fine of one hundred dollars and costs.

Approved, March 8, 1899.

MARYLAND.

The general State game law, Acts of 1898, chap. 206, only contains provisions against sale of game in close seasons. The following abstracts of local laws are taken from the compilation of the game and fish laws prepared by the Maryland Game and Fish Protective Association, and are arranged alphabetically by counties.

Anne Arundel. [Unlawful to sell any partridge, quail, woodcock or pheasant taken in Anne Arundel County, or to carry the same out of the county alive or dead. Penalty, $5 for each bird, or 10 days; one-half to informer, one-half to county schools. Acts 1900, chap. 151.]

Caroline. [Unlawful to ship or attempt to ship out of this county at any season, any partridges, quail, woodcock, or rabbits shot or trapped in said county. Penalty, $5 for each bird, etc., so shipped. Possession by any express or transportation company of any of said game is *prima facie* evidence of violation. Public Local Laws, 1888, Art. 6, Secs. 30, 31.]

Frederick. [Unlawful to sell, barter or trade, (or to attempt the same) any pheasant, partridge, squirrels or woodcock that have been trapped or shot in Frederick county. Penalty, $10 for each bird, etc.; one-half to informer. Public Local Laws, 1888, Art. 11, Secs. 45, 48, 53.

[Unlawful to ship or attempt to ship beyond the limits of Frederick county, or to sell for the purpose of shipping, or to send or carry beyond said limits for the purpose of sale, etc., any pheasants, partridges, squirrels or woodcock shot, snared, etc., in said county. Penalty, $50 for each violation; one-half to informer. Ibid., Secs. 47, 48, 53.

[Possession of any pheasant, partridge, squirrel or woodcock in Frederick county, *prima facie* evidence that the same was shot, trapped, etc., in said county. Ibid., Sec. 49.

[Transportation or offer to transport any pheasants, partridges, squirrels or woodcock is *prima facie* evidence that the same were transported or shipped or offered for transportation or shipment for the purpose of sale. Ibid., Sec. 50.

[Carrying of pheasants, partridges, squirrels, or woodcock from door to door is *prima facie* evidence that the same were offered for sale. Ibid., Sec. 51.]

Kent. [Unlawful for any person or corporation in this county to ship or transport for sale beyond said county (or attempt the same) any bird, rabbit, or squirrel killed or taken in said county without first obtaining a license. Penalty, $30 for each offense; one-half to informer. Possession of any of said game by an express or transportation company at any time is *prima facie* evidence of violation. Acts 1894, chap. 501, Secs. 38, 39.]

Montgomery. [Unlawful to sell for the purpose of being carried out of the county, or to carry out of the same, for the purpose of sale, any partridge, pheasant, or wild turkey. Penalty, $10 for each violation; one-half to informer. Public Local Laws, 1888, Art. 16, Secs 56, 57.]

Queen Anne. [Unlawful to ship, or attempt to ship for sale, out of said county, at any season, any partridge, rabbit, or woodcock shot or trapped in this county, without obtaining license. Penalty, $5 for each bird so shipped or sold, payable to school fund. Possession by any transportation company *prima facie* evidence of violation. Public Local Laws, 1888, Art. 18, Secs. 34, 36.]

Somerset. [Unlawful to send or take any of the following game out of the county: Rabbit, squirrel, muskrat, partridge, pheasant, dove, woodcock, wild duck, wild goose. Penalty, $5 to $25 for each and every bird or animal. Acts 1900, chap. 203.]

Washington. [Unlawful to sell, or attempt to sell, at any time, pheasants, partridges, wild turkeys, deer, squirrels, or rabbits killed or trapped in Washington County, or to ship said game elsewhere to sell the same. Penalty, $10 to $20; one-half to informer. Public Local Laws, 1888, Art. 22, Secs. 32, 33, 34.]

Wicomico and Worcester. [Unlawful for any person, corporation, or company at any time to kill or expose for sale, transport, or have in possession any partridge or quail, after the same has been killed, for any purpose except for consumption as food, within Wicomico or Worcester counties; nor kill, expose for sale, or have in possession any of the above-named game with the intention of sending or transporting or having the same sent or transported beyond the limits of said counties.

[But this is not to prevent barter or sale of such game for home consumption only, by residents of said counties within the limits of said counties. Penalty, $5 to $25 for each offense, all of which is payable to informer. Public Local Laws, 1888, Art. 23, Secs. 7 and 8.]

MASSACHUSETTS.

Acts and Resolves of 1884, chap. 308.

SEC. 2. Game artificially propagated and maintained upon lands, posted as above, shall be the exclusive property of the person propagating and maintaining the same, but such person shall not sell such game for food at seasons when its capture is prohibited by law.

SEC. 3. Whoever offends against any of the provisions of this act shall be punished by a fine not exceeding twenty dollars.

Acts and Resolves of 1886, chap. 276.

SEC. 10. Whoever takes, carries, sends, or transports any of the birds or animals protected herein, out of this Commonwealth, the said birds or animals having been illegally taken or killed within this state, shall be punished by fine of twenty dollars.

Approved, June 10, 1886.

Acts and Resolves of 1890, chap. 249, p. 156.

SEC. 2. Whoever at any time takes or sends or causes to be taken or transported beyond the limits of the Commonwealth any woodcock, quail or ruffed grouse taken or killed within the Commonwealth, or has in possession any such bird or birds with intent to take or cause the same to be taken out of the Commonwealth, shall be punished by a fine of ten dollars for every bird so had in possession or taken or caused to be taken or sent beyond the limits of the Commonwealth as aforesaid.

Approved, April 30, 1890.

Acts and Resolves of 1900, chap. 379.

SEC. 2. For a period of three years after the passage of this act it shall also be unlawful to buy, sell, offer for sale, or have in possession for sale, any woodcock or ruffed grouse, commonly called partridge, whenever or wherever the said birds may have been taken or killed.

SEC. 3. It shall be unlawful to take or kill or have in possession, or buy, sell or offer for sale, a quail, between the first day of December and the first day of October following, whenever or wherever such bird may have been taken or killed: *provided, however*, that any person, firm or corporation dealing in game or engaged in the cold storage business may buy, sell or have in possession, and any person may buy from such person, firm or corporation, and have in possession if so bought, quail from the first day of December to the first day of May, if such quail were not taken or killed in this Commonwealth contrary to the provisions of this act; and any person, firm or corporation dealing in game or engaged in the cold storage business may have quail in possession on cold storage at any season, if such quail were not taken or killed in this Commonwealth contrary to the provisions of this act.

SEC. 4. It shall be unlawful to take or kill a pinnated grouse at any time, or a wood or summer duck, black duck or teal, between the first day of March and the first day of September, or any other of the so-called duck species, between the twentieth day of May and the first day of September, or to buy, sell or have in possession any of the birds named in this section during the time within which the taking or killing thereof is prohibited, whenever or wherever such birds may have been taken or killed: *provided, however*, that any person, firm or corporation dealing in game or engaged in the cold storage business may buy, sell or have in possession, and any person may buy from such person, firm or corporation, and have in possession if so bought, pinnated grouse, wild pigeons and any of the so-called shore, marsh or beach birds, or any of the so-called duck species, at any season, if such birds were not taken or killed in this Commonwealth contrary to the provisions of this act.

SEC. 5. Whoever takes or kills, or buys or sells or offers for sale, or has in possession, or has in possession for sale, any bird contrary to the provisions of this act, shall be punished by a fine of twenty dollars for every bird so taken or killed, or bought or sold or offered for sale, or had in possession, or had in possession for sale.

Approved, June 13, 1900.

MICHIGAN.

Public Acts of 1893, No. 196, pp. 312-314.

SEC. 1. That no person shall at any time or in any manner acquire any property in, or subject to his dominion or control, any of the birds, game or fish, the killing, taking, or having in possession of which is at any time or at all times prohibited by any of the laws of this State, that they shall always and under all circumstances and conditions be and remain the sole property of the State. * * * When their killing is not prohibited by law, the same may be used at the time, in the manner, and for the purposes expressly authorized by law, but not otherwise.

SEC. 2. No person, company or corporation shall at any time catch, take or kill, or have in possession of or under control, any of the birds, game or fish of this State, the killing of which is at any time or at all times prohibited by law, with intent to ship the same beyond the limits of this State, or with intent to allow or aid in their shipment out of this State, or shall ship or intentionally allow or aid in their shipment out of this State: *Provided, however*, That fish taken or caught in Lakes Michigan, Superior, Huron and Erie, and the bays and harbors connected with said lakes, and the Sault Ste. Marie, St. Clair, Saginaw and Detroit rivers may be sold, transported, and shipped out of this State.

SEC. 3. No person shall at any time have in possession or under control any bird, game or fish caught, taken or killed outside of this State, which was caught, taken or killed at any time, in a manner or for a purpose forbidden by the laws of the State, Territory or country where the same was caught, taken or killed, or which was shipped out of said State, Territory or country in violation of the laws thereof.

SEC. 4. The possession or having under control of any kind of bird, game or fish, the killing of which is at any time or at all times prohibited by the laws of this State, shall be *prima facie* evidence that it was killed in this State, to disprove which it shall be necessary to show by the testimony of the party who actually caught, took or killed the same that it was killed outside of this State. Whenever it shall appear that any bird, game or fish of a kind the killing of which is at any time or at all times prohibited by the laws of this State, was caught, taken or killed outside of this State, it shall be *prima facie* evidence that such bird, game or fish was caught, taken or killed at a time, in a manner and for a purpose prohibited by the laws of the State, Territory or country where it was caught, taken or killed, and was shipped out of said State, Territory or country in violation of the laws thereof. * * *

SEC. 5. No person, company or corporation shall sell, or attempt to sell, or expose for sale, or have in possession or under control, for the purpose of selling or exposing for sale, any kind of bird, game or fish at any time when the taking, catching or killing of such kind of birds, game or fish is prohibited by the laws of this State: *Provided, however*, That nothing in this act shall prevent the taking or catching alive of birds, game or fish for domestication, propagation or breeding purposes.[1]

SEC. 6. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars and not more than fifty dollars, and the costs of prosecution, and in default of payment thereof shall be confined in the county jail until such fine and costs shall be paid; but such confinement shall not exceed thirty days.

Approved, June 1, 1893.

MINNESOTA.

General Laws of 1897, chap. 221, pp. 413-429.

SEC. 9. No person shall at any time or in any manner acquire any property in or subject to his dominion or control, any of the birds, animals or fish within this State of the kinds herein mentioned, but they shall always and under all circumstances be and remain the property of this State. By killing, catching or taking the same, however, in the manner and for the purposes herein authorized, and during the periods when their killing is not herein prohibited, the same may be used at the time, in the manner and for the purposes herein authorized, and during the periods when their killing is not herein prohibited, the same may be used at the time, in the manner and for the purposes herein expressly authorized, but not otherwise; and whenever any person kills, catches, takes, ships or has in his possession, or under control, any of the birds, animals or fish mentioned in this act at a time or in a manner prohibited by this act, such person shall thereby forfeit and lose all his right to the use and possession of such bird, animal or fish, and the State shall be entitled to the sole possession thereof.

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[1] The game and fish warden department, under advice of the attorney-general of the State, holds that none of the game birds or animals protected for part or all of the time under the laws of Michigan, can be transported beyond the limits of the State.

SEC. 10. * * * It shall be unlawful and is prohibited to catch, take, kill or have in possession or ship any woodcock, turtle dove, snipe, upland plover, prairie chicken or pinnated grouse, white-breasted or sharp-tailed grouse, between the first day of November and the first day of September following; or any quail, partridges, ruffled grouse or pheasant, between the first day of December and the first day of October following; or upland plover, prairie or golden plover, between the thirty-first day of October and the fourth day of July following; or any Mongolian, English or Chinese pheasant at any time prior to the first day of September, A. D. one thousand nine hundred and four (1904). The sale, exposing for sale, having in possession with intent to sell, or the shipment to any person, either within or without this State, by common or private carrier, of any ruffed grouse, sometimes known as partridge or pheasant, is hereby prohibited and made unlawful.

Wild duck of any variety, or any variety of wild goose, brandt, or any variety of aquatic fowl whatever, between the fifteenth day of April and the first day of September following.

Except that when the birds mentioned in this section have been lawfully caught, taken and killed within the time herein allowed, they may be had in possession for ten (10) days after the time hereinbefore limited, for use as herein specified, but not otherwise. Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten (10) dollars nor more than twenty-five (25) dollars and costs of prosecution, or by imprisonment in the county jail for not less than ten (10) days nor more than thirty (30) days for each and every bird so caught, taken or killed, shipped or had in possession or under control.

SEC. 13. No person shall at any time catch, take, kill, receive or have in possession or under control any of the birds in this act mentioned, caught, taken or killed in this State, with intent to ship the same beyond the limits of this State, or with intent to allow or aid in their shipment out of this State, or ship the same out of this State.

Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor and on conviction thereof shall be punished by a fine of not less than ten (10) dollars nor more than twenty-five (25) dollars and costs of prosecution, or by imprisonment in the county jail for not less than ten (10) days nor more than thirty (30) days for each and every bird so caught, taken, killed or had in possession or under control, or so shipped or allowed, or aided to be shipped.

SEC. 14. * * * It shall be and is hereby made unlawful for any person to ship or cause to be conveyed by common carrier, or convey or caused to be conveyed by any private conveyance at any time any elk, moose, caribou or deer to any person except the same is in the control of and accompanied by some person in charge thereof other than an employee of a common carrier. *Provided further*, that it shall be and is hereby made unlawful for any person to ship or cause to be conveyed in the manner aforesaid any of such animals in excess of five (5) in number during any one year from and after October twenty-fifth (25th); and whoever shall offend against any provision of this section shall be guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not less than fifty dollars nor more than one hundred dollars and costs of prosecution, or by imprisonment in the county jail for not less than sixty days nor more than ninety days for each and every deer, fawn or elk so caught, killed, taken, shipped or had in possession or under control.

SEC. 15. No person shall hunt, catch, ship or have in possession or under control at any time any moose or caribou, except that antlered moose and antlered caribou may be killed between the fifth day of November and the tenth day of November in the same year, but no person shall kill more than one moose and one caribou in any one season: *and provided further*, that when any male moose or male caribou have been lawfully killed they may be had in possession for five days after the time herein limited for killing the same, and be used in the manner herein allowed, but not otherwise.

Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred dollars nor more than three hundred dollars and costs of prosecution, or by imprisonment in the county jail for not less than ninety days nor more than two hundred days, for each and every moose or caribou caught, taken, killed, shipped or had in possession or under control.

SEC. 18. No person shall at any time catch, take, kill or have in possession or under control any elk, deer, moose or caribou, or any part thereof, caught, taken or killed in this State, with intent to ship the same beyond the limits of this State, or with intent to allow or aid in their shipment out of this State, or shall ship or allow or aid in their shipment out of this State.

Whoever shall offend against any of this provision of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than fifty dollars nor more than one hundred dollars and costs of prosecution, or by imprisonment in the county jail for not less than sixty days nor more than ninety days, for each and every deer, moose, caribou or any part of the same so caught, taken or killed, or had in possession, or under control, or so shipped, or allowed to be shipped, or aided to be shipped.

SEC. 19. Any person who is legally in possession of any of the birds or animals herein mentioned which have been caught, taken and killed at a time and in a manner permitted by the provisions of this act, and who is desirous of retaining possession of the same for his own use after the time hereinbefore limited when they may be had in possession, and who shall before the expiration of the five days hereinbefore limited within which they may be had in possession, make application to the board of game and fish commissioners for leave to retain the same, which application shall be in writing and signed and sworn to by the applicant, and shall state:

First—The name and residence of the person in possession of such birds or animals.

Second—The number, kinds and location of said birds or animals, which unless (number) shall not exceed one hundred birds, five deer, one moose and one caribou for each applicant.

Third—That if permitted to retain the same by said board the applicant will keep possession of said birds and animals for his own use and will not ship, sell or dispose of same.

If said board is satisfied that said application is made in good faith, and said applicant will keep said birds or animals for his own use and not for sale, the said board shall cause tags or seals which can not be duplicated by others, and which can not be removed without destroying the same, to be attached to each bird or animal, not exceeding one hundred birds, five deer, one moose, one caribou, for each applicant. The person making such application shall, before said tags or seals are attached, pay to such board the reasonable expense of making and attaching such tags or seals.

After such tags or seals have been so attached as aforesaid by said board, and the person who made such application keeps possession of such birds or animals for his own use and does not ship, sell or dispose of the same, and such tags or seals remain upon said birds or animals, he may retain possession of such birds or animals until consumed.

Any person who shall ship, sell or dispose of any birds or animals which have been tagged or sealed as aforesaid shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than twenty-five dollars nor more than fifty dollars and costs of prosecution, or by imprisonment in the county jail for not less than thirty nor more than sixty days for each and every bird or animal so shipped or sold or disposed of.

SEC. 32. No person shall at any time have in possession or under control in this State any bird, animal or fish caught, taken or killed outside of this State at a time when it is unlawful to have in possession or under control such birds, animals or fish when caught, taken or killed in this State.

Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten (10) dollars nor more than fifty (50) dollars and cost of prosecution, or by imprisonment in the county jail for not less than ten (10) days nor more than sixty (60) days for each and every such bird, animal or fish had in possession or under control.

SEC. 33. The possession or having under control any bird animal or fish of any kind, the killing of which is at any or all times herein prohibited, shall be *prima facie* evidence that it was the property of this State at the time when it was caught, taken or killed, and that it was caught, taken and killed in this State. * * * Whenever it shall appear that any bird, animal or fish of any of the kinds the killing of which is at any or all times herein prohibited was caught, taken or killed outside of this State, it shall be *prima facie* evidence that at the time it was caught, taken or killed it was the property of the State, Territory or country in which it was caught, taken or killed, and that such bird, animal or fish was caught, taken or killed at a time, in a manner or for a purpose prohibited by the laws of the State, Territory or country where it was caught, taken or killed, and that it was shipped out of said State, Territory or country in violation of law thereof. * * *

SEC. 34. It shall be the duty of every common carrier, its agents and all other persons, whenever any bird, animal or fish of any of the kinds the killing of which is at any or all times herein prohibited, is, in violation of law, offered for transportation or had in possession for such purpose, or is shipped, to at once notify the board of game and fish commissioners of this State, or one of the game wardens appointed by them, of the name and residence of the party making such shipment, the place from whence shipped and the name and residence of the party to whom shipped, and the kinds of birds, animals or fish so shipped.

Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than fifty (50) dollars nor more than one hundred (100) dollars and costs of prosecution, or by imprisonment in the county jail for not less than sixty (60) days nor more than ninety (90) days.

SEC. 36. Any bird, animal or fish mentioned in this act caught, killed, shipped or had in possession or under control contrary to any provision of this act, is hereby declared to be and shall be contraband, and it shall be the duty of all members of the board of game and fish commissioners, all game wardens, sheriffs and their deputies, constables and police officers of this State, at any and all times to seize and take possession of any and all birds, animals or fish which have been caught, taken or killed at a time, in a manner or for a purpose, or had in possession or under control, or have been shipped contrary to any provision of this act. * * *

SEC. 45. Any attempt to violate any of the provisions of any section of this act shall be deemed a violation of such provision and punishable in the same manner as a violation of such provision is punishable.

SEC. 49. The provisions of this act shall not apply to domesticated birds or animals. * * *

Approved, April 23, 1897.

MISSISSIPPI.

[No general prohibitions against transportation or sale.]

MISSOURI.

[No general prohibitions against transportation or sale.]

MONTANA.

Laws of 1897, pp. 251, 253.

SEC. 8. That any person who shall willfully catch, trap or otherwise restrain, for the purpose of sale or domestication or any other purpose, any buffalo, elk, moose, or mountain sheep within the State, shall be deemed guilty of a misdemeanor and be fined not more than Five Hundred Dollars nor less than One Hundred Dollars, and shall be imprisoned in the county jail not exceeding six months or by both such fine and imprisonment for each offense committed in the discretion of the court.

SEC. 17. Any person or persons, agent or employees, of any stage or express company, or railroad company, or association of persons, who shall receive for transportation or carriage, or shall sell or offer for sale, fish or game that have been taken or killed contrary to the provisions of this Act, knowing or having reason to believe that such fish or game were so illegally caught, taken or killed, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined in any sum not less than One Hundred Dollars, or more than Three Hundred Dollars for each lot or shipment of fish or game so transported or carried, or be imprisoned in the county jail for not less than ninety days, or both in the discretion of the court.

SEC. 19. Every person who shall sell or offer for sale, any of the birds or animals or any part thereof mentioned in sections 1, 2, 3, 4, 5 and 6 of this Act [deer, elk, moose, antelope, bison, buffalo, mountain sheep, Rocky Mountain goat, quail, partridge, grouse, prairie chicken, fool hen, sage hen, pheasant, Chinese pheasant, wild duck, wild goose, brant, swan], is punishable by a fine of not less than Twenty-five Dollars or more than Two Hundred and Fifty Dollars, or by imprisonment in the county jail for not less than thirty days, nor more than ninety days, or both such fine and imprisonment in the discretion of the court.

Approved, March 8, 1897.

NEBRASKA.

[No general prohibitions against transportation or sale.]

NEVADA.

Compiled Laws, 1900, pp. 181-182.

SEC. 861. It shall be unlawful for any person or persons, firm, company, corporation, or association, within this State, to have in his or their possession, or to sell, buy, transport, or give away, or offer or expose for sale, or purchase from any person whomsoever, either Indians or other persons, any of the birds [quail, partridge, grouse, sage hen, pheasant, plover, woodcock, snipe, curlew, mud hen, sand-hill crane, duck, goose, brant, swan], wild game or animals [deer, elk, caribou, antelope, mountain sheep, goat], mentioned in this Act, during the seasons wherein the killing, injuring, pursuing, netting, trapping, pounding, weiring, caging, selling, buying, transporting, giving away, offering or exposing for sale, or having in his or their possession, is herein prohibited; *provided*, that nothing in this Act shall be so construed as to prohibit any person or persons, firm, company, corporation, or association, taking any bird, fowl, or animal mentioned in this Act at any time for scientific purposes.

SEC. 862. Any person or persons, firm, company, corporation, or association, or common carrier, or the agent of any such firm, company, corporation, or association, or common carrier, violating any of the provisions of this Act shall be deemed guilty of a misdemeanor, and upon conviction be fined in any sum not less than twenty-five ($25) dollars, nor more than two hundred ($200) dollars, or imprisonment in the county jail of the county in which said conviction is had, for any term not exceeding six months, or by both such fine and imprisonment, and in addition to the costs now allowed by law on criminal prosecution, twenty-five ($25) dollars liquidated damages, shall be entered up as costs against each defendant, and collected in the manner now provided by law for the collection of costs in civil actions, which said sum of twenty-five (25) dollars shall be paid to the party instrumental in securing the arrest and conviction of said defendant.

Approved February 27, 1893.

SEC. 865. Every railroad company, express company, transportation company, or other common carrier, their officers, agents and servants, and every other person who shall transport, carry or take out of this State, or who shall receive for the purpose of transporting from the State, any deer, buck, doe or fawn, or any mountain sheep or antelope, or any quail, sage chicken, prairie chicken, grouse, dove, wild duck or goose, except for purposes of propagation, shall be guilty of a misdemeanor. Any person found guilty of a violation of any of the provisions of this section, shall be fined in a sum not less than twenty ($20) dollars nor more than five hundred ($500) dollars or be imprisoned in the county jail not less than ten nor more than ninety days, or by both such fine and imprisonment.

Approved February 16, 1899.

NEW HAMPSHIRE.

Public Statutes, 1891, chap. 131.

SEC. 6 (as amended by Laws of 1899, chap. 30, p. 266). If any person shall take, catch, kill, or destroy, during the open season of any year, any cow moose, or more than one bull moose, two caribou, or two deer, he shall be punished as provided in section 1 of this chapter, for each offense; and if any person shall have in his possession the carcasses or hides of more than the aforesaid number of moose, caribou, or deer, or parts thereof, or the carcass or hide, or any part thereof, of any animal, it shall be *prima facie* evidence that he has hunted and killed the same contrary to law; and no person or corporation shall transport any of said animals, or parts thereof, unless open to view, tagged, and plainly labeled with the name of the actual owner, and accompanied by him, under a penalty of fifty dollars, except that the Blue Mountain Forest Association may kill deer and moose within the confines of its game preserve as established by chapter 258 of the Laws of 1895, until January 15 of each year, and may ship them to points without the State at any time when accompanied by a certificate of the fish and game commission that they were legally killed; and the fish and game commission shall provide such rules and regulations as are necessary for the carrying out of the provisions of this paragraph without any expense to the State of New Hampshire.

Public Statutes, 1891, chap. 132, p. 365.

SEC. 3. [If any person shall kill, expose for sale, or have in possession any woodcock, ruffed grouse, or partridge, after the 15th day of September, or during the months of October, November, and December of any year, or plover during the months of August, September, October, November, December, and January of any year, except for consumption as food within the State, he shall be punished.]

NEW JERSEY.

Laws of 1900, chap. 111, p. 300.

[SEC.] 31. It shall be unlawful at all times to remove, or attempt to remove, from this State any ruffed grouse (frequently called partridge or pheasant), quail (frequently called partridge), hare (frequently called rabbit), English pheasant, woodcock or squirrel; *provided*, that this act shall not apply to common carriers carrying from beyond the confines of this State in unbroken packages to some other point beyond the confines of this State any such birds, game or fish; and any person, persons or corporation found guilty of the violation of this section, shall be punished by a fine of twenty dollars for each bird, game or fish so removed; or attemped to be removed; *provided, further*, that this act shall not apply to any such birds or game when killed upon any game preserve stocked by the owners thereof.

Approved, March 23, 1900.

NEW MEXICO.

Compiled Laws 1897, p. 394.

SEC. 1362. It shall be unlawful to sell or expose for sale, at any time, any of the game, birds or animals, the killing of which is prohibited or restricted by this act [deer, elk, antelope, mountain sheep, ibex, mountain goat, quail, partridge, grouse, prairie chicken, pheasant, wild turkey], or to sell the flesh, hide or any part thereof. It shall be unlawful to sell any speckled trout, or other food fish, caught in any of the public waters of the Territory: *Provided*, That it is not the intention of this act to prevent dealers and butchers from selling any game, birds or animals killed outside the boundaries of this Territory.

In any trial for the violation of the provisions of this act, the burden of proof shall be upon such dealers or butchers, to prove that such birds or animals were killed without the boundaries of this Territory.

SEC. 1363. It shall be unlawful for any railway, express company, stage line, or public carrier, to transport outside the Territory, or receive for such transportation, any of the game, birds or animals mentioned in this act, or the flesh or hides thereof, that may be offered for such transportation at any place in this Territory.

SEC. 1364. Nothing in this act shall prevent professional taxidermists from killing birds or animals for the purpose of preserving the same, nor any person from capturing or taking any of said birds or animals for the purpose of domesticating or preserving the same in parks or inclosures within this Territory: *Provided*, Such taxidermists or other persons must prove that such birds or animals have been preserved and used for such purpose. Birds or animals so taken for such purposes may be shipped out of the Territory, only upon written permit from some duly appointed warden of this Territory.

SEC. 1365. Any person or persons, or the officer, agent or employee, of any firm or corporation, who shall violate any of the provisions of this act, shall be deemed guilty of a misdemeanor and upon conviction thereof, before any justice of the peace, or other court of competent jurisdiction, shall be punished for each offense by fine in a sum not less than twenty-five dollars nor more than one hundred dollars, or by imprisonment in the county jail for not less than thirty, nor more than sixty days, or by both such fine and imprisonment, at the discretion of the court or justice trying the case.

NEW YORK.

Laws of 1900, chap. 20.

ARTICLE I. QUADRUPEDS.

SEC. 8. Deer or venison killed in this State shall not be transported from or through any county, or possessed for that purpose, except as follows: One carcass or a part thereof may be transported from the county where killed when accompanied by the owner. No person shall transport or accompany more than two deer in any year under this section. Possession of deer or venison by a common carrier, or by any person in its employ while engaged in the business of such common carrier, unaccompanied by the owner shall constitute a violation of this section by such common carrier. This section does not apply to the head, feet or skin of deer if carried separately.

SEC. 19. A person who violates any provision of this article is guilty of a misdemeanor, and in addition thereto, is liable as follows: For each violation of sections one to eleven, both inclusive, to a penalty of one hundred dollars, and for each deer, wild moose, elk, caribou, antelope or part of any such animal taken or possessed in violation of any provision of any of said sections, an additional penalty of one hundred dollars. * * *

ARTICLE II. BIRDS.

SEC. 29. Woodcock, grouse and quail shall not be transported within this State or into the State from a point without the State less than twenty-five miles from the State line unless accompanied by the actual owner thereof, and no person shall transport or accompany more than thirty-six grouse or thirty-six woodcock in any calendar year, or more than twelve of either kind at one time. Possession thereof by a common carrier, or employee thereof, at the time actually engaged in the business of such common carrier, unaccompanied by the actual owner thereof, shall constitute a violation of this section by such employee and common carrier. No common carrier or person in its employ shall transport such birds as owner.

SEC. 38. [Birds or game, except fish, taken in this State shall not be transported without the State; nor shall the same be taken or possessed with intent to transport the same without the State. Any person doing any act with reference to such birds or game in aid of such taking or transportation with knowledge of the intention to so transport the same shall be deemed to have violated this section.]

SEC. 39. A person who violates any provision of this article is guilty of a misdemeanor, and is liable to a penalty of sixty dollars and to an additional penalty of twenty-five dollars for each bird or part of bird taken or possessed in violation thereof.

NORTH CAROLINA.

Code, 1883, II, chap. 21, p. 235.

SEC. 2835. No person shall export or transport from the State any quail or partridges, whether dead or alive, and any person violating this section shall be guilty of a misdemeanor, and fined not exceeding fifty dollars or imprisonment not more than thirty days for each offense. (1876–77, c. 195; 1880, c. 57.)

Public Laws of 1897, chap. 291, p. 468.

SEC. 2 [as amended, 1899]. That it shall be unlawful for any person or persons to hunt, shoot, take or capture any wild fowl in the county of Currituck, between the 31st of March and the 10th day of November of each year, or to sell or to ship out of the State any wild fowl between said dates.

NORTH DAKOTA.

Revised Codes, 1895, chap. 72, p. 1363.

[SEC.] 7683. Shipping out of State. Every person who within this State ships or receives for shipment beyond the limits of this State any of the game birds or animals mentioned in section 7677 [prairie chicken, pinnated grouse, sharp-tailed grouse, ruffed grouse, woodcock, plover, wild duck, wild goose, brant, buffalo, elk, deer, antelope, caribou, mountain sheep] * * * is guilty of a misdemeanor, and upon conviction thereof is punishable by a fine of ten dollars for each game bird or fish so shipped or received and one hundred dollars for each animal so shipped or received.

OHIO.

Revised Statutes, 1897 (as amended by General Acts of 1898, Vol. XCIII, p. 108).

SEC. 6964. * * * Whoever purchases, sells or exposes for sale, or has in his possession, any dove, except between the fourth day of July and the fifteenth day of December, inclusive; or any snipe, rail, killdeer or plover, except between the first day of September and the fifteenth day of May, inclusive; or any coot or mud hen, or wild duck, except between the first day of September and the fifteenth day of April, inclusive; or any Mongolian pheasant, English or ring-neck pheasant, before the tenth day of November, 1903, or after that date, except between the tenth day of November and the fifteenth day of December, inclusive; or any of the song or insectivorous birds mentioned in section 6960; or whoever shall at any time, catch or kill, any quail, wild turkey, ruffed grouse or pheasant, prairie chicken, woodcock, squirrel, Mongolian pheasant, or English or ring-neck pheasant, for the purpose of conveying the same beyond the limits of this State, or for sale in the markets of this State, or shall transport or have in possession with intent to procure the transportation beyond the limits of this State, or for sale in the markets of this State, any quail, wild turkey, ruffed grouse, or pheasant, prairie chicken, woodcock, squirrel, Mongolian pheasant, or English or ring-neck pheasant, killed within this State, shall be fined as provided in section 6968. And in addition thereto, shall be liable to a penalty of twenty-five dollars for each bird trapped or possessed contrary to the provisions of this act. The reception by any person within this State of any such birds, game or animals, for shipment to a point without the State, shall be prima facie evidence that such birds, game or animals were killed within this State for the purpose of conveying the same beyond its limits; *Provided*, that the provisions of this act shall not be construed as applicable to any common carrier into whose possession any of the birds, game or animals herein mentioned, shall come in the regular course of their business for transportation, while they are in transit through this State from any place without this State, where the killing of such birds, game or animals shall be lawful, but nothing in the provisions of this act shall prevent any one having in his possession wild deer during the time when the killing thereof is made penal. Any game warden or deputy game warden in this State shall have authority and right, at any time, to open packages, boxes, crates or other receptacles containing the birds, game or animals prohibited by this act from being transported without the limits of this State, delivered to a common carrier for transportation out of the State, and shall take and confiscate such birds, game or animals about to be transported out of the State and deliver them to some hospital, infirmary or charitable institution.

Passed April 12, 1898.

SEC. 6968. [Any person convicted of any violation of any of the provisions of this act shall be fined not less than twenty-five (25) dollars nor more than one hundred (100) dollars, and in case of neglect or refusal to pay said fine, be imprisoned in the county jail or workhouse, and shall there remain for the full period of thirty days. (Revised Statutes, 1897.)]

OKLAHOMA.

Session Laws of 1899, Chap. XV, pp. 165-167.

SEC. 3. Any person having lawfully taken any of the game mentioned in this Act, or any person lawfully having any of said game in his possession, may sell the same to persons living in the Territory of Oklahoma, for consumption therein.

SEC. 4. No person shall at any time have in possession or under control any birds, game or fish caught, taken or killed outside of this Territory, which was caught, taken or killed at a time, in a manner, or for a purpose forbidden by the laws of this Territory or the State, Territory or country where the same was caught, taken or killed, or which was shipped out of said State, Territory or country in violation of the laws thereof.

SEC. 5. [Possession of birds or game at a time prohibited by the laws of this Territory shall be *prima facie* evidence that it was killed in this Territory. Whenever it shall appear that any birds or game, the killing of which is at any time prohibited by the laws of this Territory, was killed outside of this Territory, it shall be *prima facie* evidence that such bird or game was killed at a time, in a manner, and for a purpose prohibited by the laws of the Territory, State, or country where killed, and was exported out of said Territory, State, or country in violation of the laws thereof.]

SEC. 6. No person, company or corporation shall sell or attempt to sell, or expose for sale, or have in possession or under control, for the purpose of selling or exposing for sale, any kind of bird, game or fish at any time, when the taking, catching or killing of such kind of birds, game or fish is prohibited by the laws of this Territory.

SEC. 7. [Violation of any of the provisions of sections 4, 5, and 6 of this act shall be deemed a misdemeanor, punishable by a fine of not less than ten, nor more than fifty dollars and costs of prosecution, and in default of payment thereof by imprisonment not exceeding sixty days.]

SEC. 10. It shall be unlawful for any person, company or corporation within this Territory to export or carry to any other Territory, or State or country any game or the parts of any game mentioned in this Act, and any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars, and costs of suit, and shall be committed to the common jail of the county wherein the offense was committed until such fine and costs are paid.

SEC. 11. It shall be unlawful for any railroad company, express company or other common carrier, their officers, agents, servants or any other person or persons to purchase or receive within this Territory any of the game mentioned in Section 1, of this Act, or any meat or parts of such game, for the purpose of transporting or carrying the same beyond the limits of this Territory or in any manner handling the same, or to transport or carry any of said game or meat or part thereof beyond the limits of this Territory. Except that the provisions of this section shall not apply to fine birds or animals captured and held for domestic or scientific purposes: *And provided*, That not more than one pair of such birds or animals may be shipped at any one time. And any agent, officer or servant of any railroad company, express company or other common carrier, or any other person or persons violating any of the provisions of this section shall be deemed guilty of a misdemeanor, and on conviction, shall be fined in any sum not less than fifty dollars nor more than five hundred dollars, with cost of suit. And any railroad company, express company of [sic] other common carrier violating any of the provisions of this section shall forfeit and pay to the Territory of Oklahoma, for each violation thereof, the sum of two hundred dollars, together with all costs of suit, to be recovered in a civil action to be instituted in the name of the Territory of Oklahoma by the county attorney of any county wherein said suit is brought, which sum of two hundred dollars shall be collected upon execution as in civil cases.

Approved, March 10th, 1899.

OREGON.

General Laws of 1899, pp. 133-136.

SEC. 1. * * * It shall be unlawful at any time to hunt, pursue, take, kill or have in possession any deer, moose or mountain sheep for the purpose of obtaining the skin, hide, horns, hams or other flesh of such animal for the purpose of sale, barter, exchange or trade. It shall be unlawful for any person or corporation to buy or offer to buy, or transport or carry for purposes of trade, sale, barter, or exchange the skin, hide, horns, hams or other flesh of any deer, moose or mountain sheep.

SEC. 6. It shall be unlawful within the State of Oregon at any time to take, kill, injure, destroy or have in possession, except for breeding purposes, or sell or offer for sale any English partridge or wild turkey between the thirty-first day of January, 1899, and the first day of February, 1904.

SEC. 7. It shall be unlawful within the State of Oregon, to sell, exchange or offer for sale or exchange, for money or other valuable consideration, or to take or kill for sale, or to have in possession for sale or exchange, any grouse, pheasant, quail, bobwhite, Mongolian pheasant, silver pheasant, golden pheasant, copper pheasant or green Japanese pheasant * * * except for breeding purposes, for a period of three years after the passage of this act.

SEC. 8. It shall be unlawful within the State of Oregon at any time for any person or servant, agent or employee or operative of any railroad, steamboat, express or other company or corporation to transport or carry out of the State, or have in possession for the purpose of shipment or carriage outside of the State of Oregon, any of the game birds named in the foregoing section, except for breeding purposes; *provided, however*, that it shall be lawful to ship live birds as heretofore enumerated in the foregoing section out of the State of Oregon for breeding purposes, upon written permit for the same having first been obtained from the game and forestry warden upon affidavit of the applicant that such game birds were bred and raised in confinement.

SEC. 10. It shall be unlawful within the State of Oregon at any time to destroy or remove from any nest of any mallard duck, widgeon, wood duck, teal, spoonbill gray, black, sprigtail or canvasback duck, Mongolian or other pheasant, prairie chicken or sage hen, grouse, quail or bobwhite, English or other partridge, wild turkey or any other wild fowl, any egg or eggs of such fowls, or have in possession, sell or offer for sale or exchange any such egg or eggs, or willfully destroy the nest of any such fowls.

SEC. 11. [Proof of possession of animals or birds at a time when it is unlawful to take or kill the same shall be *prima facie* evidence of violation of any of the provisions of this act.]

SEC. 14. It shall be unlawful within the State of Oregon at any time to take or kill for sale or exchange, to be transported or carried, or to transport or carry, out of the State of Oregon any wild duck, geese, swan or other wild fowl so taken or killed. * * * It shall be unlawful from and after the passage of this act for any person at any time to take, kill or have in his possession for the purpose of selling or offering for sale any snipe, commonly known as jacksnipe.

SEC. 15. Any person or persons violating any of the provisions of this act * * * shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $15 nor more than $200, together with the costs of the prosecution of said action, or by imprisonment in the county jail of the county wherein such offense may have been committed not less than seven nor more than one hundred days, or both such fine and imprisonment; *provided, however* that any person or persons violating any of the provisions of section 1 of this act shall be punished by a fine of not less than $100 nor more than $500, together with the costs of such action, or by imprisonment, or both.

Approved February 18, 1899.

PENNSYLVANIA.

Laws of 1897, No. 103, pp. 125-126.

SEC. 5. That it shall be unlawful at any period or season of the year to kill, entrap, or pursue with intent to kill or entrap, any elk, deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock in any part of this Commonwealth for the purpose of selling the same. And it shall be unlawful for the proprietor, manager, clerk or agent of any market or other person, firm or corporation, to purchase, sell or expose for sale any elk, deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock killed or entrapped within this Commonwealth. That it shall be unlawful for the proprietor, manager, clerk or agent of any market or any other person, firm or corporation to purchase for the purpose of again selling the same any elk, deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock killed or entrapped within this Commonwealth. Whoever shall offend against any of the provisions of this section shall be liable to a penalty of one hundred dollars for every elk, deer, fawn, so taken, purchased or sold, and twenty-five dollars for every wild turkey, pheasant, grouse, quail, partridge or woodcock so taken, purchased or sold, or by imprisonment in the county jail for a period of one day for each dollar of penalty imposed.

SECTION 6. No person or persons, company or corporation, or the agent or the employe thereof shall, at any time, catch, take or kill, or have in his or its possession or under his, her or its control, any of the birds or game mammals of this State, the killing of which at any or all times is prohibited by the laws of this State, with intent to ship or remove the same beyond the limits of this State, or with intent to allow or aid in the shipment or removal thereof out of this State; and it shall not be lawful for any person or persons, railroad company, express company stage driver or any company or corporation, or person or persons acting in the capacity of a common carrier, their officers or employes, to knowingly receive for transportation or transport or remove beyond the limits of the State any of the game birds or game mammals mentioned in this act; * * * Whoever shall offend against any of the provisions of this section shall be liable to a penalty of not less than fifty dollars, nor more than one hundred dollars, for each and every offense, or by imprisonment in the county jail for a period of one day for each dollar of penalty imposed: Provided, That no penalty shall apply to the transportation of such game birds and game mammals in transit through the State from other States.

Approved June 4, 1897.

RHODE ISLAND.

Act of May 4, 1900.

SEC. 1. Every person who shall take, kill, destroy, buy, sell, or offer for sale, or have in his possession any wild bird, or birds, at any season of the year, except as hereinafter provided,[1] shall be fined twenty dollars for each of such birds.

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[1] For close seasons see p. 25.

SEC. 12. * * * Every person who shall take, kill, destroy, sell, buy, or offer for sale, or have in his possession any pheasant, before the first day of October nineteen hundred and five, shall for each offense be fined twenty dollars, provided that the word pheasant shall not be construed to apply to the birds commonly called partridge or ruffed grouse.

SEC. 13. Every person who shall carry or send beyond the line of this State, any wood-cock, quail, or ruffed grouse commonly called partridge, shall be fined twenty dollars for each of said birds.

SOUTH CAROLINA.

Laws of 1900, p. 450.

SEC. 431. It shall not be lawful for any person, except upon his own lands, or upon the lands of another with the consent of the owner thereof, to net or trap a partridge, and it shall be unlawful for any person to sell, offer for sale, or ship or export for sale, any partridge or quail for the space of five years from the approval of this Act: *Provided*, That nothing in this Act shall prevent the importation for sale of any partridge or quail. Any person violating this section shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not exceeding thirty dollars, or by imprisonment in the county jail for a term not exceeding thirty days.

Approved February 9, 1900.

SOUTH DAKOTA.

Session Laws of 1899, chap. 90, pp. 112–113.

[SEC.] 3. [Shipping or selling out of the State.] It shall be unlawful for any person, railroad company, express company, or other common carrier, or the servants or agents of such common carrier, at any time to send, ship, carry or transport out of this State, or to have in his or their possession for that purpose any game mentioned in this Act [quail, prairie chicken or pinnated grouse, sharp-tailed grouse, ruffed grouse, plover, curlew, woodcock, wild duck, goose, brant, crane] and the possession of such game by any person, railroad company, express company or other common carrier shall be deemed presumptive evidence of the violation of the laws of this State enacted for the protection of game: *Provided*, nothing in this Act shall be construed to abridge or repeal any existing laws of this State prohibiting the sale of game within this State: *Provided*, nothing in this section shall prevent any person from taking game during the open season, and three days thereafter, out of the State when shipped in open view, tagged and plainly labeled with the name of the owner thereof, and accompanied by him, to be used for food only, and not for commercial purposes, and in no instance shall any person be permitted to take out of the State, at any one time, a greater number than twenty-five birds. Any person, corporation or company violating any of the provisions of this section, shall be punished by a fine of not less than ten dollars, nor more than fifty dollars for each offense.

[SEC.] 4. [Attempt to violate.] Any attempt to violate any provision of any section of this Act shall be deemed a violation of such provision.

Approved, March 6, 1899.

Session Laws of 1899, chap. 91, p. 118.

[SEC.] 2. [Unlawful to sell.] It shall be unlawful for any person or persons to sell or offer for sale within the State of South Dakota, at any time, any carcasses or parts of carcasses of any of the animals named in Section 1 of this Act. [Buffalo, elk, deer, antelope, or mountain sheep.]

[SEC.] 3. [Unlawful to transport.] It shall be unlawful for any railway company, express company, or other common carrier, or the servants or agents of such common carrier, at any time to send, ship, carry or transport out of this State any carcass or carcasses of any of such animals as named in Section 1 of this Act.

[SEC.] 4. [Violation—Penalty.] Any person or persons who shall violate any part of any of the three preceding sections shall, upon conviction thereof, be fined not less than twenty five dollars ($25) nor more than two hundred dollars ($200), or be imprisoned in the county jail not less than thirty (30) days nor more than six (6) months, or both such fine and imprisonment at the discretion of the court.

Approved, March 4, 1899.

TENNESSEE.

Acts of 1897, chap. 55, pp. 195-196.

SEC. 1. * * * That it shall be unlawful for any person to export quail, dead or alive, out of the State of Tennessee, for five years from and after the passage of this Act.

SEC. 2. * * * That any person violating the first section of this Act shall be deemed guilty of a misdemeanor, and, upon conviction before any court having jurisdiction, shall be fined not less than five nor more than ten dollars for each quail so exported.

Approved, March 24, 1897.

TEXAS.

General Laws of 1897, chap. 149, pp. 214-215.

SEC. 1. * * * That all the wild deer, wild antelope, wild turkeys, wild ducks, wild geese and wild grouse, wild prairie chickens (pinnated grouse), wild Mongolian or English pheasants, wild quail or partridges, wild plover, snipe, and jacksnipe, found within the borders of this State, shall be, and the same are hereby, declared to be the property of the public.

SEC. 2. Whoever shall sell, or offer for sale, have in his possession for the purpose of sale, or whoever shall purchase or have in his possession after purchase, any wild deer or antelope killed in this State, or the carcass thereof, or the fresh hide thereof, or whoever shall sell or offer for sale, or have in his possession for the purpose of sale, or whoever shall purchase, or have in his possession after purchase, any of the game mentioned in section 1 of this act, killed or taken within this State, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined in any sum not less than ten nor more than one hundred dollars; *provided*, that the sale and purchase of the game mentioned in section 1 of this act shall not be unlawful when said sale or purchase is made in the county where such game was killed or taken; *provided*, that nothing herein contained shall be construed to prohibit the sale or shipment of wild ducks and wild geese.

SEC. 7. It shall be unlawful for any express company, railroad company, or other common carrier, or the officers, agents, servants, or employees of the same, to receive for the purpose of transportation, or to transport, carry, or take beyond the limits of this State, or within this State, any animal, bird, or waterfowl mentioned in section 1 of this act; and it shall be unlawful for any person to transport, carry or take beyond the limits of this State any animal, bird, or fowl mentioned in section 1 of this act; and whoever shall violate the provisions hereof shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than twenty-five nor more than two hundred dollars; *provided*, that each shipment shall constitute a separate offense, and that such express company, railroad company, or other common carrier, or their agents, servants, or employees, shall have the privilege of examining any suspected package for the purpose of determining whether such package contains any of the articles mentioned in section 1 of this act; but this act shall not apply to the shipment or transportation of live Mongolian or English pheasants shipped for scientific or breeding purposes; *provided*, that nothing herein contained shall be construed to prohibit the sale or shipment of wild ducks and wild geese.

SEC. 8. Possession at any season of the year during which the game birds and wild fowls of this State are protected by the laws hereof, shall be prima facie evidence of the guilt of the person in possession thereof.

Approved May 27, 1897.

UTAH.

Laws of 1899, chap. 26, p. 43.

SEC. 25. *Unlawful Possession of Fish or Game.* Any person who shall have in his possession any game, fish or birds taken unlawfully is guilty of a misdemeanor. All fish or game taken unlawfully or offered for sale when so taken shall be seized by the State or county fish and game warden and disposed of to the best interest of the county treasury of the county in which said seizure may be made. The possession of any animal, fish or bird, or of the remains or any part of the remains thereof, within the times or period within which the taking or killing of the same is prohibited, shall be prima facie evidence of such unlawful taking or killing; * * *

SEC. 26. *Pheasant, Quail, etc.* * * * It shall be unlawful to ship or transport any quail out of the above-named counties [Kane and Washington] at any time except for the purpose of propagation, under the direction of the State and county fish and game wardens.

SEC. 27. [Violation of any of the provisions of this act relating to game, a misdemeanor, punishable by a fine of not less than $10.]

SEC. 29. *Shipping Game or Fish out of the State.* It shall be unlawful for any person or persons at any time to ship or cause to be shipped, carried or transported out of the State any of the animals, [or] birds [deer, elk, mountain sheep, buffalo or bison, antelope, quail, partridge, pheasant, prairie chicken, sage hen or grouse, mourning dove, snipe, duck, goose, brant, swan, English, Chinese, or Mongolian pheasant, pinnated grouse, introduced game animals or birds] * * * or any part thereof mentioned in this act * * *

Approved March 9, 1899.

VERMONT.

Vermont Statutes, 1894, p. 828.

SEC. 4613. If a person at any time takes, kills, purchases, receives or causes to be taken, killed or received, a woodcock or ruffed grouse, commonly called partridge, for the purpose of shipping or in any manner disposing of the same to persons outside of this State for traffic or gain, he shall be fined ten dollars, * * *

Acts of 1896, No. 94, pp. 74–75.

SEC. 4. Deer killed or taken in Vermont shall not be transported by any person or corporation, except that the carcass, or parts thereof, of one deer, lawfully killed in the State may be transported in the open season and for ten days thereafter when open to view, tagged and plainly labeled with the name of the owner thereof and accompanied by him; and the possession of deer or a part thereof by a common carrier or servant of a common carrier, unaccompanied by the owner, or not tagged and plainly labeled with his name, shall be a violation of the provisions of this section by such common carrier and servant. But this section shall not apply to the head, feet or pelt of deer severed from the body.

SEC. 5. A person or corporation violating any of the provisions of this Act shall be fined one hundred dollars for each offense, one-half of the same to go to the complainant, the other half to the State.

Approved November 24, 1896.

Acts of 1896, No. 96, p. 76.

SEC. 1. No person or corporation shall kill, expose for sale, or have in possession at any time any game bird for which there is a close season in this State [quail, ruffed grouse or partridge, introduced pheasant, English partridge, plover, woodcock, English snipe, duck, goose] except for consumption as food within the State. But this shall not prevent a person residing out of the State from taking game birds in open season and three days thereafter out of the State when shipped open to view, tagged and plainly labeled with the name of the owner thereof and accompanied by him. Any person or corporation violating any of the provisions of this section, or any person who, not being the actual owner of such game birds, to aid another in such transportation falsely represents himself to be the owner thereof, shall be fined fifty dollars for each offense; and the delivery to or reception by any person or corporation within this State of any such game birds for shipment to a point without the State shall be prima facie evidence that the same were killed and are possessed within the State for a purpose other than that of being consumed as food within the State.

Approved, November 24, 1896.

VIRGINIA.

[No general prohibitions against transportation or sale.]

WASHINGTON.

Session Laws of 1897, Chap. LII, pp. 84–86.

SEC. 12 (as amended by Laws of 1899, Chap. CXXXVIII). Every person who shall offer for sale or market, or sell or barter any moose, elk, caribou, killed in this State, antelope, mountain sheep or goat, deer, or the hide or skin of any moose, elk, deer or caribou, or any grouse, pheasant, ptarmigan, partridge, sage hen, prairie chicken or quail at any time of the year, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided.

SEC. 13 (as amended by Laws of 1899, Chap. CXXXVIII). Every person, agent or employe of a company or corporation, hotel-keeper, restaurant keeper, boarding house keeper, or keeper of a market, or other person who shall buy or barter for, at any time of the year, the whole or any part of the meat of any moose, elk, caribou, antelope, mountain sheep or goat, deer, or the hide or skin of any moose, elk, deer or caribou, or any grouse, pheasant, ptarmigan, partridge, sage hen, prairie chicken or quail, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided.

SEC. 14. Every person, agent or employe of a company or corporation who shall at any time transport or ship out of the State, or keep stored for the purpose of transporting or shipping out of the State, any of the wild game birds or animals enumerated in the preceding sections, or any of the wild game birds or animals of this State, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided.

SEC. 18. Every person convicted of any of the misdemeanors defined in the foregoing sections of this act, shall be punished by a fine of not less than ten dollars ($10) nor more than one hundred ($100) dollars, together with the costs of the prosecution in such action, and in default of the payment of said fine, shall be imprisoned in the county jail one day for each two dollars ($2) of such fine; and upon the trial of any person, agent or employe of a company or corporation, proof of the possession of the wild animals, birds, or song birds, when it is unlawful to take, kill or have same, shall be *prima facie* evidence that the said wild game animal, game bird, or song bird, was unlawfully taken or killed by the person having possession of same.

Approved, March 11, 1897.

WEST VIRGINIA.

Acts of 1899, chap. 22, p. 89.

[SEC.] 1. * * * No person, firm or corporation shall at any time kill or have in possession any deer, wild turkey, quail, pheasant or ruffed grouse, or any part of the same, with the intention of sending or transporting the same or having the same sent or transported beyond the limits of this State.

Any person violating this section shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than twenty dollars nor more than fifty dollars, and may, at the discretion of the court or justice trying the case, be confined in jail not more than ten days.

* * * the reception by any person within this State of any deer, wild turkey, quail, pheasant, or ruffed grouse for shipment to a point without the State shall be *prima facie* evidence that the said deer, wild turkey, pheasant, or ruffed grouse, were killed within this State for the purpose of carrying the same beyond its limits.

Approved February 22, 1899.

WISCONSIN.

Wisconsin Statutes, 1898, Vol. I, chap. 62, pp. 1113–1114.

SEC. 1498 *m*. Any person or corporation, or any agent or servant of the latter, who shall, for compensation or otherwise, * * * transport any of the animals, fowl or birds for which a close season is prescribed by law, during such season, or ship, carry or transport, offer or receive for shipment or transportation to any place beyond this state any feathered game protected by these statutes except live birds and also fifty birds or fowl of any variety when the same are accompanied by and in the possession of the owner thereof * * * or ship, transport or carry out of this State to sell or offer for sale any duck of any variety or any snipe or plover between the first day of December and the next succeeding first day of September, shall forfeit not less than twenty-five dollars nor more than one hundred dollars for each such violation, to be recovered in a civil action brought in the name of the State by the State fish and game warden or one of his deputies. The possession of any such animals, fowl or birds during the close season therefor, for shipment or in transit, shall be *prima facie* evidence of the violation of this section. * * * It shall be the duty of every person whenever any animal, fish or game of any of the kinds the taking, catching or killing of which is prohibited by law at any or all times (except during the periods in which the same may be lawfully taken, caught or killed) is offered to him for transportation out of this state to at once notify and give full particulars concerning such offer and by whom made to the State fish and game warden or one of his deputies. All sections of these statutes relating to having in possession or under control or the sale, shipment or transportation of any animal, fish, water-fowl or bird, shall be construed to include any and all parts of the flesh and meat thereof.

Laws of 1899, chap. 311, p. 561.

SEC. 13. Section 4566, Wisconsin statutes of 1898, is hereby amended to read as follows: Section 4566. Any person who shall sell, or offer for sale, or purchase, or have in possession any fish, game, birds, fowls or animals, except whitefish and lake trout, protected by the laws of this State at any time during the close season prescribed therefor, respectively, shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars, or by imprisonment in the county jail not less than thirty nor more than ninety days.

SEC. 14. It shall be unlawful and is prohibited to buy, sell or transport any carcass or part of a carcass of a deer, buck, doe or fawn, until the sixth day of

November in each year, and it shall be lawful and is permitted to buy, sell or transport the carcasses of deer under the conditions provided by law relative to the transportation of the same, up to and including the twenty-fifth day of November succeeding the end of the open season. Any person who shall buy, sell or transport before the sixth day of November in each year, any carcass or part of a carcass of a deer, buck, doe or fawn, or attempt to do the same, shall be punished by a fine of not less than ten nor more than fifty dollars, and by imprisonment until the fine is paid, not more than thirty days.

Approved May 2, 1899.

Laws of 1899, chap. 312, pp. 565–577.

[SEC. 11 (amending section 1498*q*, Wisconsin statutes of 1898). Each license for hunting game shall state for what year the same is granted, and shall be valid for no other period than that which the law shall designate to be the open season for the game permitted to be hunted, taken, or killed by the terms of such license, subject to the proviso that all kinds of game can be hunted by a person holding a license for the hunting of deer. Each license for the hunting of deer issued to a nonresident of the State shall be provided with two coupons. Each coupon shall be divided into three sections, lettered "A," "B," and "C," respectively. The holder of a nonresident license shall be entitled to have transported within or without the State one carcass of a deer or part of a carcass of a deer on each of the two coupons attached to his license. The agent receiving the carcass for transportation shall detach section "A" of the coupon and forward said section to the State fish and game warden. Sections "B" and "C" are to be attached to the carcass of deer received for transportation, and all three sections of the coupon must be canceled by said receiving agent, with the date of reception for shipment and his initials written or stamped plainly thereon. While in transit within the State sections "B" and "C" of the coupon must be on the carcass, or said carcass shall be subject to seizure as contraband game. If the place of delivery is within the State of Wisconsin, the delivering agent shall, before delivery to consignee, detach section "C" and forward said section to the State fish and game warden, leaving section "B" attached to the carcass. Agents or employes of transportation companies must transmit sections of coupons within two days of the date of shipment or delivery, respectively. If the carcass of a deer be consigned to a point without the State of Wisconsin, the agent, servant, or employe of the transportation company in charge of said carcass while in transit within the State, shall detach section "C" of the coupon and deliver the same to the agent of the transportation company at the last station or place in the State where the train or other conveyance of said company shall stop. And it shall be the duty of said agent to whom said section of the coupon is delivered to immediately forward the same to the State fish and game warden, after writing or stamping thereon the name of the station or place and date of receipt thereat of said section of said coupon. Any agent, servant, or employe of any transportation company, or common carrier, who shall receive for shipment or transport any carcass of deer without having the coupons, or sections of coupons, attached thereto, or who shall refuse or neglect to detach the sections of the coupons as herein provided. or shall fail to transmit them to the State fish and game warden as herein provided, shall be punished by a fine of twenty-five to one hundred dollars, or by imprisonment of thirty days to ninety days, or by both such fine and imprisonment. No transportation company, or common carrier, shall receive for transportation or transport any carcass of deer unless the same shall be received, carried, and delivered pursuant to the provisions of this section relative to coupons, and shall only be received, carried, or delivered during the open season for transportation of carcasses of deer.]

SEC 13. Section 1498*s*, Wisconsin statutes of 1898, is hereby amended so as to read as follows: Section 1498*s*. Every person who has resided in this State for one year previous to applying for a license to hunt game and who desires to hunt the same must first obtain a license from the county clerk of the county in which he resides, * * * The license so issued to any resident of this State shall have attached two coupons for the shipment of deer. Each coupon shall be divided into two sections lettered "A" and "B" respectively. The holder of a resident coupon license shall be entitled to offer for transportation or have transported within the State by a common carrier of this State one carcass of a deer or part of carcass of deer on each of the two coupons attached to his license. The agent receiving the carcass or part of carcass for transportation shall detach section "A" of the coupon on which the same is to be transported and forward said section to the State fish and game warden. Section "B" is to be attached to the carcass or part of carcass of deer received for transportation and the two sections of the coupon must be canceled by the said receiving agent, with the date of reception for shipment and his initials written or stamped planly [sic] thereon. While in transit, section "B" of the coupon must be on the said carcass or part of carcass of deer or the said carcass or part of carcass of deer shall be subject to seizure as contraband game. The receiving agent or employe of transportation companies or common carriers are required to transmit to the State fish and game warden section "A" of the coupon as herein required, must so transmit the same within two days of the date of shipment. Any agent, servant or employe of any transportation company or common carrier who shall receive for shipment or transport any carcass of deer or part of carcass of deer without having the coupon attached thereto as herein provided, or who shall refuse or neglect to detach section "A" of the coupon as herein provided, or who shall fail to transmit or forward to the State fish and game warden as herein provided the section by him detached, shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars or by imprisonment in the county jail not less than thirty days nor more than three months, or by both such fine and imprisonment, in the discretion of the court. No transportation company or common carrier shall receive for transportation, or transport or attempt to transport any carcass of deer or part of a carcass of deer unless the same shall be received for transportation, carried and delivered pursuant to the provisions of this section relative to the coupons and parts of coupons, and shall only be received for shipment, carried or delivered during the season or time which the laws of the State shall fix as the open season for the transportation of carcasses of deer or parts of carcasses of deer.

SEC. 17. It is unlawful and is prohibited for any person holding a non-resident license as herein described to take out of the State more than fifty birds, fowls or animals, protected by the laws of this State, in any one year. *Provided*, that this section shall be construed to mean that when fifty birds, fowls or animals of any kind or variety have been taken from the State by holder of a non-resident license further right to take any kind of birds, fowls or animals by the holder of the said license shall cease. No transportation company or common carrier shall receive for transportation or shipment out of the State any birds, fowls or animals protected by the laws of the State, except when the same shall be in the personal possession of, or carried as baggage or express by the owner thereof, and such owner shall have in his possession at the time of such taking out of the State a non-resident license duly issued to him under the provision of law, and shall accompany the said birds, fowls or animals on the same train or other conveyance of the common carrier beyond the borders of the State. Any person who shall violate any of the provisions of this section shall be punished by a fine of not less than fifty nor more than two hundred dollars, or by imprisonment in the county jail not less than sixty days nor more than six months, or by both such fine and imprisonment in the discretion of the court.

SEC. 18. It is unlawful and is prohibited for any person a resident of this State to ship within or without this State any birds, fowls or animals, protected by the laws of this State, except when the same shall be in the personal possession of or carried as baggage or express by the owner thereof, and such owner shall have in his possession a resident license duly issued to him under the provision of law, and shall accompany the said birds, fowls or animals on the same train or other conveyance. Any person who shall violate any of the provisions of this section shall be punished by a fine of not less than fifty dollars nor more than two hundred dollars, or by imprisonment in the county jail not less than sixty days nor more than six months or by both such fine and imprisonment in the discretion of the court.

SEC. 19. It is hereby required that any and all packages containing fish or game shall be labeled in plain letters on the address side of the package, so as to disclose the fact that said package contains fish or game, and the nature of the said fish or game so contained in said package. Any person who shall deliver to a common carrier for transportation any package or parcel containing fish or game, which said package or parcel shall not be so labeled as herein required, or who shall place upon said package or parcel a false statement as to the contents thereof, shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars, or by imprisonment in the county jail not less than thirty days, nor more than ninety days, or by both fine and imprisonment.

SEC. 20. Every person delivering to a common carrier a package or parcel containing fish or game, shall place upon said package the name and address of the owner or consignor of said package or parcel. Any person violating the provisions of this section shall upon conviction thereof, be punished by a fine of not less than ten dollars nor more than fifty dollars.

SEC. 21. It shall be unlawful, and is hereby prohibited, for any common carrier or agent, servant or employee of a common carrier, to receive for transportation or transport any package or parcel containing fish or game, unless the same shall be labeled as provided in sections 19 and 20 of this act. Any person, firm, or corporation violating the provisions of this section shall be required to forfeit to the State of Wisconsin a sum not less than twenty-five dollars nor more than one hundred dollars, in the discretion of the court.

SEC. 22. It shall be within the power of every officer charged with the enforcement of laws protecting fish and game to examine and open any package in the possession of a transportation company, which said package he shall suspect or have reason to believe contains contraband fish or game. It is hereby made the duty of every common carrier, agent, servant or employe thereof, to permit any officer charged with the enforcement of laws for the protection of fish and game to examine and open any package or parcel in the possession of said common carrier, or agent, servant or employe thereof, which the said officer so charged with the enforcement of said laws shall suspect or have reason to believe contains fish or game protected by the laws of the State, and not entitled under such law to be transported, or when the said officer shall suspect or have reason to believe that the said package or parcel is falsely labeled. Any person, firm or corporation refusing to an officer charged with the enforcement of the fish and game laws permission to examine or open any such package or parcel or shall in any manner hinder or impede such action by the said officer, shall forfeit to the State of Wisconsin a sum not less than fifty dollars nor more than one hundred and fifty dollars, in the discretion of the court.

SEC. 23. It shall be unlawful and is hereby prohibited for any person, firm or corporation acting as common carrier to bring into this State any fish or game from any State during the time that such other State prohibits the transportation of such fish or game from said State to a point without the same. Any person, firm or corporation violating the provisions of this section shall be required to forfeit to the State the sum of not less than twenty-five dollars nor more than one hundred dollars in the discretion of the court.

Sec. 26. Section 4560, Wisconsin statutes of 1898 is hereby amended to read as follows: The ownership of and the title to all fish and game in the state of Wisconsin is hereby declared to be in the state, and no fish or game shall be caught, taken or killed in any manner at any time, or had in possession except the person so catching, taking, killing or having in possession shall consent that the title to said fish and game shall be and remain in the state of Wisconsin for the purpose of regulating and controlling the use and disposition of the same after such catching, taking or killing. The catching, taking, killing or having in possession of fish or game at any time, or in any manner, or by any person, shall be deemed a consent of said person that the title of the state shall be and remain in the state for said purpose of regulating the use and disposition of the same, and said possession shall be consent to such title in the state whether said fish or game were taken within or without this state.

Sec. 28. It shall be unlawful and is prohibited for any person, firm or corporation or common carrier to ship into, or through this State from any other State any fish or game prohibited by the laws of said State to be shipped or transported and it shall be the duty of the State fish and game warden of this State or his deputy, to seize, hold, and dispose of, according to the laws of this State, any fish or game brought into or shipped into this State, or carried through, or attempted to be carried through this State, prohibited to be so shipped or transported by the laws of any other State, and further to dispose of the same according to the laws of this State. Any person, firm or corporation violating the provisions of this act shall be required, upon due proof thereof, to forfeit a sum not less than twenty-five dollars nor more than one hundred dollars, in the discretion of the court.

Approved May 2, 1899.

WYOMING.

Revised Statutes, 1899, pp. 602-604.

Sec. 2112. Every person who may wish to transport beyond the limits of this State any carcasses, heads, antlers, scalps or skins of any animals killed in accordance with the provisions of this chapter, shall first procure from a justice of the peace of this State a certificate stating that said carcasses, heads, antlers, scalps or skins were taken from animals which were killed in season and according to law. * * * [Penalty, $25-$100, or imprisonment 10-90 days, or both.]

Sec. 2117. It shall be unlawful at any time to capture, or pursue for the purpose of capturing, any of the wild animals mentioned in section 2107 [deer, elk, moose, antelope, mountain sheep, mountain goat], of whatever age, for the purpose of selling or disposing of the same, or for shipping the same out of the State; *Provided*, It shall be lawful to sell any colon or quail for the purpose of breeding, or to take the same alive, for preservation through the winter. It shall also be lawful for any person to take alive on his own premises, at any time and in any manner, any of the animals hereinbefore mentioned for the sole purpose of domesticating, or for scientific or breeding purposes. Any person violating any of the provisions of this section shall be punished by a fine of not less than one hundred dollars for each wild animal so captured or shipped.

Sec. 2119. It shall be unlawful for any person to kill, chase, pursue or catch any buffalo of any age at any season of the year in the State of Wyoming, or to drive or in any manner remove or transport any buffalo out of the State of Wyoming. Any person or persons who shall violate the provisions of this section shall be guilty of a felony, and upon conviction thereof shall be punished by imprisonment in the State penitentiary for not less than three nor more than ten years; *Provided*, That this section shall not apply to tame or domesticated buffalo.

SEC. 2120. It shall be unlawful for any person or persons to purchase, or obtain by barter any green, tanned or untanned hide or hides or horns of any animals mentioned in section two thousand one hundred and seven. Any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than twenty, nor more than one hundred dollars, or imprisoned in the county jail for a period of thirty days, or by both.

SEC. 2121. It shall be unlawful for any railway, express company, stage line or other public carrier, or any of their agents or employees, or other person or persons, to receive or have in their possession for transportation any carcass, or part of carcass, hides, tanned or untanned, or horns of any of the animals mentioned in this chapter, except as otherwise provided by law. Except that nothing in this chapter shall prevent shipping or transporting in any manner mounted heads or stuffed birds or animals to any point in or out of the State; *Provided*, that such birds or animals were not killed in violation of this chapter, or that heads or horns were not taken from animals killed in violation of this chapter. Any person or persons or corporation knowingly transporting game or fish for market within or out of the State, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in the sum of not less than one hundred dollars nor more than five hundred dollars for each consignment from one consignor to one consignee; *Provided*, That none of the provisions of this section shall apply to game or fish in transit into or through this State from other States and Territories.

Approved February 15, 1899.

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    law, 84-85.

O

			Northwest Territories	CANADA.
	Ja		Manitoba	
15, 1905	D	pt. 15	Ontario	
	F		Quebec	
mes			New Brunswick	
mes			Nova Scotia	
	Ja		Newfoundland	

RD.		Marsh Hen.	
an. 2–Aug. 25		Massachusetts	May 1–July 15
Dec. 1–Sept. 1		New York	May 1–Sept. 1[1]
Feb. 1–Sept. 1		New Jersey	Jan. 2–Aug. 25
Nov. 1–Sept. 1[1]		Virginia	June 20–Jan. 1
Feb. 1–Aug. 20			

ies, in which tl grouse, prairie chicken, Jan. 1–Sept. 1;

CLOSE SEASONS FOR GAME IN THE UNITED STATES AND CANADA IN 1900.

The following table shows the close seasons for all game in the United States and Canada, with the exception of a few unimportant species. Close seasons include the first date, but not the last, so that open seasons may be found by reading the dates backward.
The term rabbit includes 'hare' of the Canadian laws; quail, the bird known as 'partridge' in the South; grouse, all members of the family except prairie chickens, ptarmigan, and sage hens, including Canada grouse, sharp-tailed grouse, and ruffed grouse (known as 'partridge' in the North and 'pheasant' in the South). Introduced pheasant is restricted to the Old World pheasants; and goose includes 'brant.'
States are arranged geographically and grouped according to the Hallock Code, as explained on p. 33. The general State laws have been followed in Maryland, North Carolina, and Virginia; for special county regulations in these States, in Tennessee, and elsewhere, see pp. 18-29.

[Compiled chiefly from Game Laws in Brief and corrected to December 1, 1900.]

MAMMALS.

	State.	Deer.	Elk.	Moose.	Caribou.	Antelope.	Mountain Sheep.	Squirrel.[2]	Rabbit.
NORTHERN.	Maine	Dec. 15-Oct. 1[1]		Dec. 1-Oct. 15	To Oct. 15, 1905				
	New Hampshire	Dec. 1-Sept. 15		Dec. 1-Sept. 15	Dec. 1-Sept. 15			Jan. 1-Sept. 15	Apr. 1-Sept. 15
	Vermont	Nov. 1-Oct. 22		At all times	At all times				May 1-Sept. 1
	Massachusetts	To Nov. 1, 1903						Mar. 1-Sept. 15[1]	Mar. 1-Sept. 15[1]
	Rhode Island	To Feb. 1, 1905						Jan. 1-Oct. 15	Jan. 1-Oct. 15
	Connecticut	To Oct. 1, 1903						Dec. 1-Oct. 1	Dec. 15-Oct. 15
	New York[1]	Nov. 16-Sept. 1	At all times	At all times	At all times	At all times		Dec. 16-Sept. 1	Dec. 16-Sept. 2
	New Jersey	To Mar. 24, 1902						Jan. 1-Nov. 1	Jan. 1-Nov. 1
	Pennsylvania	Dec. 1-Nov. 1	Dec. 1-Nov. 1					Dec. 16-Oct. 15	Dec. 16-Nov. 1
	Delaware								Jan. 1-Nov. 15
	Maryland[1]	Jan. 1-Aug. 1						Dec. 1-Sept. 1	Dec. 25-Nov. 1
	District of Columbia	Jan. 1-Sept. 1[6]						Feb. 1-Nov. 1	Feb. 1-Nov. 1
	Virginia[1]	Jan. 1-Aug. 15							
	West Virginia	Dec. 15-Oct. 15							
	Kentucky	Mar. 1-Sept. 1						Feb. 1-June 15	
	Ohio	Dec. 16-Nov. 10						Dec. 2-Nov. 10	Dec. 2-Nov. 10
	Michigan	Dec. 1-Nov. 8						Jan. 1-Oct. 1	
	Indiana	Jan. 1-Oct. 1						Dec. 20-June 1	
	Illinois	To Apr. 13, 1904						Dec. 15-Sept. 1	
	Wisconsin	Except Nov. 1-21[1]							
	Minnesota	Except Nov. 1-21		Except Nov. 5-10	Except Nov. 5-10				
	Iowa	At all times	At all times					Jan. 1-June 1	
	Missouri	Jan. 1-Oct. 1							
	Kansas								
	Nebraska	Jan. 1-Nov. 1	Jan. 1-Nov. 1			Jan. 1-Nov. 1			
	South Dakota	Jan. 1-Oct. 15	Jan. 1-Oct. 15			Jan. 1-Oct. 15	Jan. 1-Oct. 15		
	North Dakota	Dec. 10-Oct. 10	At all times	At all times	At all times	At all times	At all times		
	Montana	Jan. 1-Sept. 1	Nov. 15-Sept. 15	Nov. 15-Sept. 15		Jan. 1-Sept. 1	At all times		
	Wyoming	Dec. 1-Sept. 1	Dec. 1-Sept. 1	To Sept. 1, 1902		Dec. 1-Sept. 1	Dec. 1-Sept. 1		
	Colorado	Nov. 6-Aug. 15	Nov. 6-Oct. 25			Nov. 6-Aug. 15	At all times		
SOUTHERN.	North Carolina[1]	Jan. 1-Oct. 1							
	South Carolina	Feb. 1-Sept. 1[1]							
	Georgia	Jan. 1-Sept. 1							
	Florida	Feb. 1-Oct. 1							
	Alabama[1]	Jan. 1-Sept. 1						Feb. 2-July 1	
	Mississippi	Mar. 1-Sept. 15							
	Tennessee[1]	Jan. 1-Aug. 1							
	Arkansas	Feb. 1-Aug. 1							
	Louisiana	Feb. 15-Sept. 15							
	Texas	Jan. 1-Sept. 1				To June, 1902			
	Oklahoma	At all times				At all times			
	New Mexico	Jan. 1-Oct. 1[1]	To Mar. 16, 1904			Jan. 1-Oct. 1[1]	Jan. 1-Oct. 1[1]		
	Arizona	Dec. 15-Aug. 1	At all times			Dec. 15-Aug. 1	At all times		
PACIFIC.	California	Oct. 15-July 15	At all times			At all times	At all times		
	Nevada	Jan. 1-Sept. 1	Jan. 1-Sept. 1		Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1		
	Utah	Nov. 1-Oct. 1	At all times			At all times	At all times		
	Idaho	Jan. 1-Sept. 1	Dec. 1-Sept. 1	To 1904	To 1904	Jan. 1-Sept. 1	Jan. 1-Sept. 1		
	Washington	Dec. 15-Sept. 15	Nov. 1-Sept. 1	Nov. 1-Sept. 1	Nov. 1-Sept. 1	Nov. 1-Sept. 1	Nov. 1-Sept. 1		
	Oregon[1]	Nov. 1-July 15	To 1910	Nov. 1-July 15			Nov. 1-July 15	Jan. 1-Oct. 1	
CANADA.	British Columbia	Dec. 15-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1		Dec. 15-Sept. 1		Jan. 1-Sept. 1
	Northwest Territories[10]	Dec. 15-Nov. 1	Dec. 15-Nov. 1	Dec. 15-Nov. 1	Dec. 15-Nov. 1	Dec. 15-Nov. 1	Dec. 15-Oct. 1		
	Manitoba	Dec. 1-Sept. 15	Dec. 1-Sept. 15	Dec. 1-Sept. 15	Dec. 1-Sept. 15	Dec. 1-Sept. 15			
	Ontario	Except Nov. 1-16	At all times	To Nov. 1, 1903	To Nov. 1, 1903			Dec. 16-Sept. 15	Dec. 16-Sept. 15
	Quebec	Jan. 1-Sept. 1[1]		Jan. 1-Sept. 1[1]	Feb. 1-Sept. 1[1]				Feb. 1-Nov. 1[1]
	New Brunswick	Jan. 1-Sept. 15		Jan. 1-Sept. 15[1]	Jan. 1-Sept. 15[1]				
	Nova Scotia	To 1904	To 1904	Jan. 1-Sept. 15	Jan. 1-Oct. 1				Feb. 1-Oct. 1[1]
	Newfoundland		To Jan. 1, 1906	To Jan. 1, 1906	Feb. 1-Oct. 21[11]				Mar. 1-Sept. 16

BIRDS.

	State.	Quail.	Grouse.	Prairie Chicken.	Wild Turkey.	Dove.	Introduced Pheasant.
NORTHERN.	Maine	Dec. 1-Oct. 1	Dec. 1-Sept. 15				To 1909
	New Hampshire	Dec. 15-Sept. 15	Dec. 15-Sept. 15				To Sept. 15, 1901
	Vermont	Jan. 1-Sept. 1	Jan. 1-Sept. 1			At all times	Nov. 20-Oct. 1
	Massachusetts	Dec. 1-Oct. 1[1]	Dec. 1-Oct. 1[1]			At all times	To 1905
	Rhode Island	Dec. 16-Oct. 15	Dec. 16-Oct. 15			At all times	To Oct. 1, 1905
	Connecticut	Dec. 1-Oct. 1	Dec. 1-Oct. 1				To 1905
	New York[1]	Dec. 16-Nov. 1	Dec. 16-Sept. 16			At all times	To 1905
	New Jersey	Jan. 1-Nov. 1	Jan. 1-Nov. 1			Oct. 1-Aug. 1	Jan. 1-Nov. 1[2]
	Pennsylvania	Dec. 16-Oct. 15	Dec. 16-Oct. 15	Dec. 16-Oct. 15	Dec. 16-Oct. 15		To May 27, 1902
	Delaware	Jan. 1-Nov. 15	Jan. 1-Nov. 15				
	Maryland[1]	Dec. 25-Nov. 1	Dec. 25-Nov. 1		Dec. 25-Nov. 1	Dec. 25-Aug. 15	Dec. 25-Nov. 1
	District of Columbia	Feb. 1-Nov. 1	Dec. 26-Nov. 1	Feb. 1-Sept. 1	Dec. 26-Nov. 1		
	Virginia[1]	Jan. 1-Oct. 15	Feb. 1-Sept. 15		Feb. 1-Sept. 15		At all times
	West Virginia	Dec. 20-Nov. 1	Dec. 15-Oct. 15	Dec. 15-Oct. 15	Jan. 15-Sept. 15	At all times	
	Kentucky	Jan. 1-Nov. 15	Jan. 1-Nov. 15		Feb. 1-Sept. 1	Feb. 1-Aug. 1	
	Ohio	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10		Dec. 15-July 5[6]	Dec. 16-Nov. 10
	Michigan	Dec. 1-Oct. 20[7]	Dec. 1-Oct. 20[2]		To 1905	At all times	To 1905
	Indiana	Jan. 1-Nov. 10	Jan. 1-Nov. 10	Feb. 1-Sept. 1	Feb. 1-Nov. 1	At all times	To 1905
	Illinois	Dec. 20-Nov. 1	Oct. 1-Aug. 31	Oct. 1-Aug. 31	Jan. 15-Sept. 1	Dec. 1-Sept. 1	To Apr. 13, 1904
	Wisconsin	To Sept. 1, 1901	Dec. 1-Sept. 1	Dec. 1-Sept. 1		At all times	To Sept. 1, 1902
	Minnesota	Dec. 1-Oct. 1	Dec. 1-Oct. 1	Nov. 1-Sept. 1		Nov. 1-Sept. 1	To Sept. 1, 1904
	Iowa	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Dec. 1-Sept. 1	Jan. 1-Nov. 1	At all times	
	Missouri	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Aug. 1	
	Kansas	Dec. 1-Oct. 1	Dec. 1-Oct. 1	Dec. 1-Oct. 1		At all times	
	Nebraska	Jan. 1-Nov. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Nov. 1	At all times	
	South Dakota	Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1			
	North Dakota	To Aug. 21, 1905	Oct. 1-Aug. 20	Oct. 1-Aug. 20			To Aug. 21, 1905
	Montana	At all times	Dec. 15-Aug. 15	Dec. 15-Aug. 15			At all times
	Wyoming		Dec. 1-Aug. 15	Dec. 1-Aug. 15			
	Colorado	At all times	Nov. 1-Aug. 15	Nov. 1-Aug. 15	Nov. 1-Aug. 15	Oct. 1-July 15	At all times
SOUTHERN.	North Carolina[1]	Mar. 15-Nov. 1			Mar. 15-Nov. 1	Mar. 15-Nov. 1	
	South Carolina	Apr. 1-Nov. 1	Apr. 1-Nov. 1		Apr. 1-Nov. 1	Mar. 1-Aug. 1	To Dec. 22, 1903
	Georgia	Mar. 15-Nov. 1	Mar. 15-Nov. 1		Mar. 15-Nov. 1	Mar. 15-Aug. 15	
	Florida	Mar. 1-Nov. 1			Mar. 1-Nov. 1		
	Alabama[1]	Mar. 2-Nov. 15	Mar. 2-Nov. 15	Mar. 2-Nov. 15	Mar. 2-Nov. 15	Mar. 1-Aug. 1	To Feb. 8, 1904
	Mississippi	May 1-Oct. 1			May 1-Oct. 1	Mar. 1-Sept. 15	
	Tennessee[1]	Mar. 1-Nov. 1	Feb. 1-Sept. 1		Apr. 1-Oct. 1	Feb. 1-Nov. 1	To Mar. 13, 1902
	Arkansas	Mar. 1-Oct. 1		Feb. 1-Sept. 1	May 1-Sept. 1	At all times	
	Louisiana	Mar. 1-Oct. 1	Mar. 1-Oct. 1		May 1-Oct. 1	Mar. 1-Oct. 1	
	Texas	Mar. 15-Oct. 1		Feb. 1-Aug. 1	Apr. 1-Sept. 1		To June, 1902
	Oklahoma	Feb. 1-Oct. 15	At all times	Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Aug. 1	To Jan. 1, 1904
	New Mexico	Jan. 1-Oct. 1[1]	Jan. 1-Oct. 1[1]	Jan. 1-Oct. 1[1]	Jan. 1-Oct. 1[1]		To Mar. 10, 1902
	Arizona	Mar. 1-Oct. 15	Mar. 1-Oct. 15	To Mar. 16, 1902	Mar. 1-Oct. 15	Mar. 1-June 1	To Mar. 16, 1902
PACIFIC.	California	Mar. 1-Oct. 1[2]	Feb. 15-Sept. 1			Feb. 15-July 15	
	Nevada	Mar. 15-Sept. 15	Mar. 15-Sept. 15				
	Utah	At all times[2]	Dec. 1-Aug. 15	Dec. 1-Aug. 15		Dec. 1-July 1	At all times
	Idaho	Dec. 1-Nov. 1	Dec. 1-Aug. 15	Dec. 1-Aug. 15			To 1902
	Washington	To Oct. 15, 1901	Dec. 1-Aug. 15	Dec. 1-Aug. 15[1]			To Oct. 15, 1901
	Oregon[1]	Dec. 1-Oct. 1	Dec. 1-Oct. 1	Dec. 1-Oct. 1	To Feb. 1, 1904		Dec. 1-Oct. 1[1]
CANADA.	British Columbia	At all times	Jan. 1-Sept. 1	Jan. 1-Sept. 1			At all times
	Northwest Territories[10]		Dec. 15-Sept. 15	Dec. 15-Sept. 15			
	Manitoba	Jan. 1-Aug. 1	Nov. 15-Oct. 1	Nov. 15-Oct. 1		At all times	
	Ontario	Dec. 16-Oct. 15	Dec. 16-Sept. 15	To Sept. 15, 1905	To Oct. 15, 1905	At all times	To Sept. 15, 1905
	Quebec		Dec. 15-Sept. 1[1]				
	New Brunswick		Dec. 1-Sept. 15				At all times
	Nova Scotia		To Oct. 1, 1901[2]				At all times
	Newfoundland		Jan. 12-Sept. 16				

	State.	Plover.	Snipe.	Woodcock.	Rail.	Duck.	Goose.	Swan.
NORTHERN.	Maine	May 1-Aug. 1	May 1-Aug. 1	Dec. 1-Sept. 15		May 1-Sept. 1		
	New Hampshire	Feb. 1-Aug. 1[8]		Dec. 15-Sept. 15	Feb. 1-Aug. 1	Feb. 1-Aug. 1		
	Vermont	Jan. 1-Sept. 1[8]	Jan. 1-Sept. 1	Jan. 1-Sept. 1		Jan. 1-Sept. 1	Jan. 1-Sept. 1	
	Massachusetts	May 1-July 15	May 1-July 15	Dec. 1-Oct. 1[3]	May 1-July 15	Mar. 1-Sept. 1[1]		
	Rhode Island	Dec. 16-July 15	Dec. 16-July 15	Dec. 16-Oct. 15	Dec. 16-July 15	Jan. 1-Aug. 15	Jan. 1-Aug. 15	
	Connecticut			Dec. 1-Oct. 1	Jan. 1-Sept. 1[1]	May 1-Sept. 1	May 1-Sept. 1	
	New York[1]	May 1-Sept. 1	May 1-Sept. 1	Dec. 16-Sept. 16	May 1-Sept. 1[1]	Apr. 30-Sept. 1	Apr. 30-Sept. 1	Apr. 30-Sept. 1
	New Jersey	Oct. 1-Aug. 1[8]	Jan. 1-Sept. 1[5]	Dec. 11-Oct. 1[5]	Jan. 2-Aug. 25	May 2-Sept. 1	May 2-Sept. 1	May 2-Sept. 1
	Pennsylvania	Jan. 1-July 15[8]		Dec. 16-Oct. 15[3]	Dec. 1-Sept. 1	May 1-Sept. 1	May 1-Sept. 1	May 1-Sept. 1
	Delaware				Feb. 1-Sept. 1	Apr. 15-Oct. 1[9]	Apr. 15-Oct. 1	Apr. 15-Oct. 1
	Maryland[1]	May 1-Aug. 15	May 1-Aug. 15	Dec. 25-Nov. 1[3]	Nov. 1-Sept. 1	Apr. 10-Nov. 1	Apr. 10-Nov. 1	Apr. 10-Nov. 1
	District of Columbia	May 1-Sept. 1	May 1-Sept. 1	Jan. 15-July 15	Feb. 1-Aug. 20	May 1-Sept. 1	May 1-Sept. 1	
	Virginia[1]			Apr. 1-Nov. 1		May 1-Sept. 1[1]	May 1-Sept. 1	May 1-Sept. 1
	West Virginia		July 1-Mar. 1	Nov. 2-July 15		Apr. 1-Oct. 1	Apr. 1-Oct. 1	
	Kentucky			Feb. 1-June 20		Apr. 1-Aug. 15	Apr. 1-Aug. 15	
	Ohio	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10[4]		
	Michigan	Dec. 1-Oct. 20	Dec. 1-Oct. 20[3]	Dec. 1-Oct. 20		Feb. 1-Sept. 1[1]	May 1-Sept. 1[1]	Feb. 1-Sept. 1
	Indiana			Jan. 1-July 1		Apr. 15-Sept. 1		
	Illinois	Apr. 25-Sept. 1	Apr. 25-Sept. 1	Dec. 1-Sept. 1	Apr. 15-Sept. 1	Apr. 15-Sept. 1	Apr. 15-Sept. 1	Apr. 15-Sept. 1
	Wisconsin	Dec. 1-Sept. 1	Dec. 1-Sept. 1	Dec. 1-Sept. 1		Jan. 1-Sept. 1	May 1-Sept. 1	Jan. 1-Sept. 1
	Minnesota	Oct. 31-July 4[8]	Nov. 1-Sept. 1	Oct. 31-July 4		Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1
	Iowa			Jan. 1-July 10		Apr. 15-Sept. 1	Apr. 15-Sept. 1	
	Missouri	Jan. 1-Aug. 1		Jan. 1-Aug. 1		Apr. 1-Oct. 1		
	Kansas							
	Nebraska					May 1-Sept. 1	May 1-Sept. 1	
	South Dakota	May 15-Sept. 1		Jan. 1-Sept. 1		May 1-Sept. 1	May 1-Sept. 1	
	North Dakota			Oct. 1-Aug. 20		Jan. 1-Aug. 20	May 1-Aug. 20	To Aug. 21, 1905
	Montana					May 1-Sept. 1	May 1-Sept. 1	May 1-Sept. 1
	Wyoming	May 1-Sept. 1	May 1-Sept. 1		May 1-Sept. 1	May 1-Sept. 1	May 1-Sept. 1	At all times
	Colorado		Apr. 16-Sept. 1[9]			Apr. 16-Sept. 1[9]	Apr. 16-Sept. 1[9]	Apr. 16-Sept. 1[9]
SOUTHERN.	North Carolina[1]					Local laws	Local laws	Local laws
	South Carolina			Apr. 1-Nov. 1				
	Georgia							
	Florida					Apr. 1-Oct. 1		
	Alabama[1]			Mar. 2-Nov. 15				
	Mississippi							
	Tennessee[1]	May 1-Sept. 1	Mar. 1-Sept. 15	Mar. 1-Sept. 15		May 1-Sept. 1		
	Arkansas							
	Louisiana					Apr. 1-Sept. 1[1]		
	Texas							
	Oklahoma	Jan. 1-Aug. 1						
	New Mexico							
	Arizona		Mar. 1-Oct. 15		Mar. 1-Oct. 15	Apr. 1-Oct. 1	Apr. 1-Oct. 1	
PACIFIC.	California				Mar. 1-Oct. 1	Mar. 1-Oct. 1		
	Nevada	Apr. 1-Sept. 15	Apr. 1-Sept. 15			Apr. 1-Sept. 15	Apr. 1-Sept. 15	Apr. 1-Sept. 15
	Utah		Dec. 15-Sept. 15[7]			Dec. 15-Sept. 15[7]	Dec. 15-Sept. 15[7]	Dec. 15-Sept. 15[7]
	Idaho					Mar. 1-Aug. 15	Mar. 1-Aug. 15	Mar. 1-Aug. 15
	Washington	Mar. 1-Aug. 15			Mar. 1-Aug. 15	Mar. 1-Aug. 15	Mar. 1-Aug. 15	Mar. 1-Aug. 15
	Oregon[1]		Feb. 1-Sept. 1			Mar. 15-Sept. 1		Mar. 15-Sept. 1
CANADA.	British Columbia	Mar. 1-Sept. 1				Mar. 1-Sept. 1		
	Northwest Territories[10]		May 5-Aug. 23			May 5-Aug. 23		
	Manitoba	Jan. 1-Aug. 1	Jan. 1-Aug. 1	Jan. 1-Aug. 1		Jan. 1-Sept. 1		
	Ontario	Dec. 16-Sept. 15	Dec. 16-Sept. 15	Dec. 16-Sept. 15	Dec. 16-Sept. 15	Dec. 16-Sept. 1	May 1-Sept. 15	May 1-Sept. 15
	Quebec	Feb. 1-Sept. 1	Feb. 1-Sept. 1	Feb. 1-Sept. 1		Apr. 1-Sept. 1[3]		
	New Brunswick		Dec. 2-Sept. 1	Dec. 2-Sept. 1		Dec. 2-Sept. 1	Dec. 2-Sept. 1	
	Nova Scotia		Mar. 1-Sept. 1	Mar. 1-Sept. 1		Mar. 1-Sept. 1[4]		
	Newfoundland	Jan. 12-Sept. 16	Jan. 12-Sept. 16			Jan. 12-Nov. 16		

SPECIES WHICH ARE RARE, OR PROTECTED IN ONLY A FEW STATES.

Buffalo.	
South Dakota	Jan. 1-Oct. 15
North Dakota	At all times
Montana	At all times
Colorado	At all times
Utah	At all times
Northwest Territories	At all times

Mountain Goat.	
Montana	Jan. 1-Sept. 1
Wyoming	Dec. 1-Sept. 1
New Mexico	At all times
Arizona	At all times
Nevada	Jan. 1-Sept. 1
Idaho	Jan. 1-Sept. 1
Washington	Nov. 1-Sept. 1
British Columbia	Dec. 15-Sept. 1
Northwest Territories[10]	Dec. 15-Oct. 1

Ptarmigan.	
Colorado	At all times
Washington	Dec. 1-Aug. 15
Quebec	Feb. 1-Nov. 1
Nova Scotia	At all times
Newfoundland	Jan. 12-Sept. 16

Sage Hen.	
Montana	Dec. 15-Aug. 15
Wyoming	Oct. 15-July 15
Colorado	Nov. 1-Aug. 15
Nevada	Mar. 1-Aug. 15[1]
Utah	Dec. 1-Aug. 15
Idaho	Dec. 1-Aug. 15
Washington	Dec. 1-Aug. 15

Reedbird.	
New Jersey	Jan. 2-Aug. 25
Pennsylvania	Dec. 2-Sept. 1
Delaware	Feb. 1-Sept. 1
Maryland	Nov. 1-Sept. 1[1]
District of Columbia	Feb. 1-Aug. 20

Curlew.	
Rhode Island	Dec. 16-July 15
New York	May 1-Sept. 1[1]
South Dakota	May 15-Sept. 1
Wyoming	May 1-Sept. 1
Colorado	Apr. 16-Sept. 1[9]
Nevada	Apr. 1-Sept. 15
Quebec	Feb. 1-Sept. 16
Newfoundland	Jan. 12-Sept. 1

Crane.	
South Dakota	May 1-Sept. 1
North Dakota	May 1-Aug. 20
Colorado	Apr. 16-Sept. 1[9]
Nevada	Apr. 1-Sept. 15
Washington	Mar. 1-Aug. 15

Mud Hen.	
Massachusetts	May 1-July 15
New York	May 1-Sept. 1
Ohio	Dec. 2-Nov. 10[4]
Nevada	Apr. 1-Sept. 15

Marsh Hen.	
Massachusetts	May 1-July 15
New York	May 1-Sept. 1[1]
New Jersey	Jan. 2-Aug. 25
Virginia	June 20-Jan. 1

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[1] Certain county exceptions. [2] Certain species. [3] Except month of July. [4] Except Mar. 10-Apr. 11. [5] Except month of April. [6] Sale or possession. [7] Except month of March. [8] Upland plover only. [9] Altitudes above 7,000 feet, Apr. 16-Sept. 15. [10] Except unorganized Territories, in which the seasons are as follows: Deer, elk, caribou, mountain sheep, mountain goat, Apr. 1-July 15 and Oct. 1-Dec. 1; musk ox, Mar. 20-Oct. 15; grouse, prairie chicken, Jan. 1-Sept. 1; duck, goose, swan, Jan. 15-Sept. 1. [11] Except July 16-Oct. 1.

BULLETIN No. 15

U. S. DEPARTMENT OF AGRICULTURE
DIVISION OF BIOLOGICAL SURVEY

THE RELATION OF SPARROWS TO AGRICULTURE

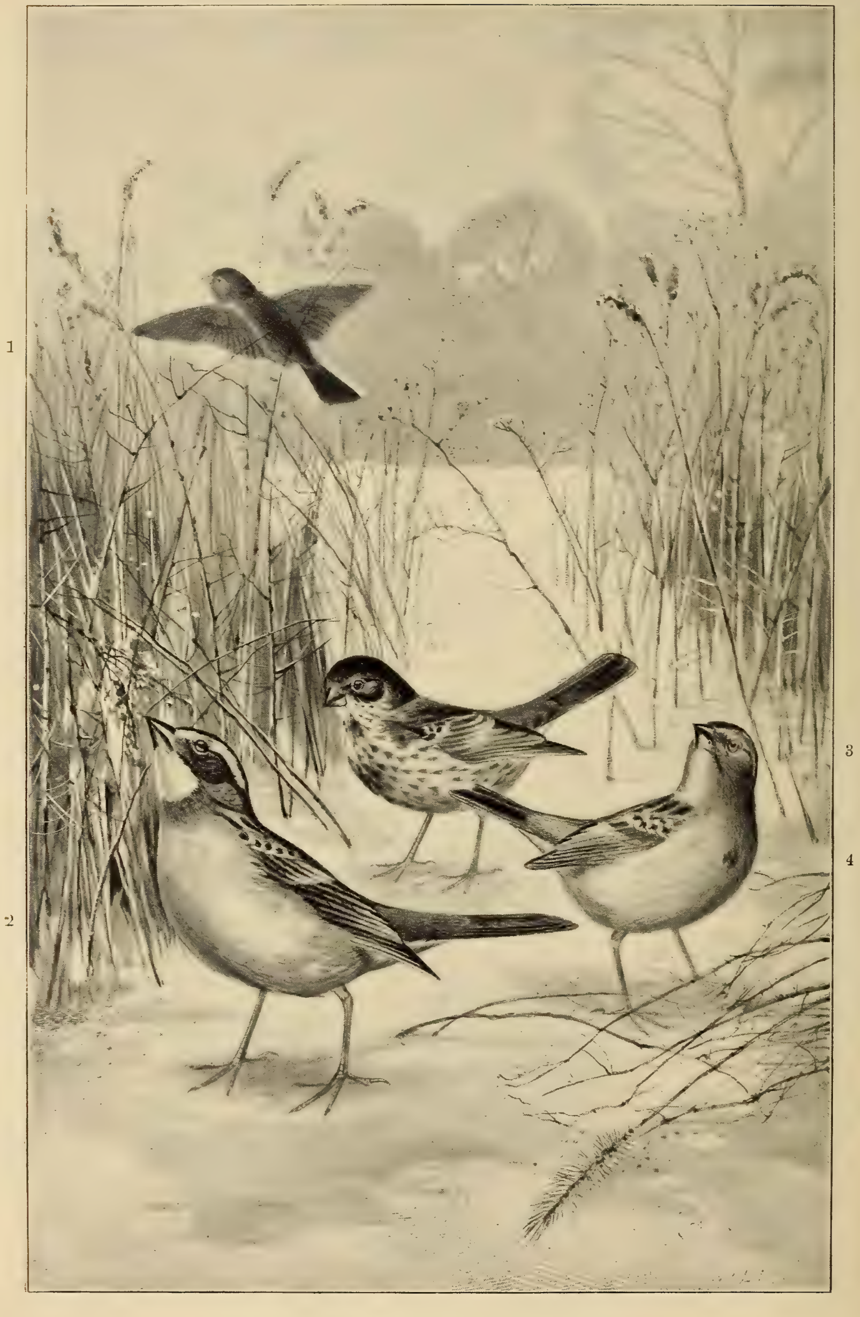
BY

SYLVESTER D. JUDD, Ph. D.
ASSISTANT, BIOLOGICAL SURVEY

PREPARED UNDER THE DIRECTION OF
Dr. C. HART MERRIAM
CHIEF OF BIOLOGICAL SURVEY

1862 1889

WASHINGTON
GOVERNMENT PRINTING OFFICE
1901



Four common Seed-destroying Sparrows.

1, Junco; 2, White-throated Sparrow; 3, Fox Sparrow; 4, Tree Sparrow.

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1901

LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Division of Biological Survey,
Washington, D. C., July 3, 1901.

Sir: I have the honor to transmit herewith for publication as Bulletin No. 15 of the Biological Survey a report on "The Relation of Sparrows to Agriculture," by Dr. Sylvester D. Judd, assistant in this office. Sparrows are notorious seed eaters, but the precise nature of their food and its effect on agriculture have not hitherto been known with any degree of accuracy. This report, based on extended field observations and an examination of 4,273 stomachs of sparrows, brings out clearly the extent to which several native species feed on seeds of noxious weeds, and shows the value of these birds as weed destroyers.

Respectfully,

C. Hart Merriam,
Chief, Biological Survey.

Hon. James Wilson,
Secretary of Agriculture.

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THE RELATION OF SPARROWS TO AGRICULTURE.

INTRODUCTION.

IMPORTANCE OF SPARROWS.

The native sparrows are the most abundant and widely distributed of the small birds inhabiting the rural districts of the United States. Wherever there are farms these characteristic little birds may be found nesting in orchard, berry patch, vineyard, or hedgerow, enlivening the shrubbery from dooryard to outlying field with their songs, or in winter rising from the ground and fluttering from bush to bush before one who invades their haunts. As a group they are constantly present on cultivated land, although many of them retire to the South during the winter and their places are taken by other species from the North.

Sparrows are well known, and have figured frequently in ornithological literature, but the position they occupy in relation to agriculture has heretofore received only casual consideration. It is evident that a group of birds so abundant, so widely distributed, and in such constant association with farms and gardens must play an important part in rural economy, and that a thorough investigation of their food habits should be useful. The results of such an investigation are embodied in the present paper and amply demonstrate the value of these birds to the agriculturist—a value greater than that of any other group of birds whose economic status has thus far been investigated. The native sparrows contrast markedly in this respect with the introduced English sparrow, the pernicious habits of which have formed the subject of a special report,[1] and are briefly treated in this bulletin for purposes of comparison (see p. 92). This naturalized sparrow is a pest wherever it is found, while the native sparrows are well worthy of protection and encouragement.

CONSTITUENTS OF FOOD.

The great bulk of the food of sparrows and other small passerine (or perching) birds consists of fruit, seeds, and insects. The fruit may be wild berries taken from shrubs or trees of no economic importance, with little economic result whether the bird eats much or little; or it may be cultivated fruit, in which case, of course, it is desirable to know the amount destroyed.

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[1] The English Sparrow in North America, Bull. No. 1, Div. Ornith. and Mamm., 1889.

The seed element is of particular interest only when it shows destruction of grain or weeds. Injury to grain or fruit by birds is usually the most prominent and often the only fact of economic ornithology possessed by the layman; yet comparatively few birds harm either of these crops, while many species render important service to agriculture by destroying weed seed. As has been aptly said, a weed is a plant out of place. Certain plants seem to have formed a habit of constantly getting out of place and installing themselves in cultivated ground, but whether actually among crops or in adjacent waste land, from which they can spread to cultivated soil, they are always a menace. In the garden they occupy the room allotted to useful plants, and appropriate their light, water, and food. Any check on these noxious interlopers, a million of which can spring up on a single acre, will not only lessen nature's chance of populating the soil with worse than useless species, but will enable the farmer to attain greater success with cultivated crops. The hoe and cultivator will do much to eradicate them, but some will always succeed in ripening a multitude of seeds to sprout the following season. Certain garden weeds produce an incredible number of seeds. A single plant of one of these species, as purslane, for instance, may mature as many as 100,000 seeds in a season, and these, if unchecked, would produce in a few years a number of weeds utterly beyond comprehension. The habits of some of the common weeds are considered in connection with the discussion of the value of birds as weed destroyers (see pp. 25–28).

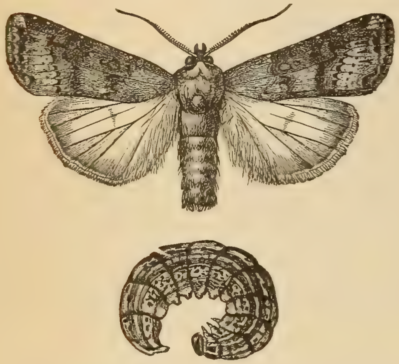
FIG. 1.—Cutworm and moth (after Howard; loaned by Division of Entomology).

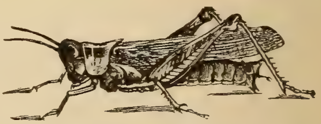
FIG. 2.—Grasshopper (after Riley; loaned by Division of Entomology).

The animal food of the smaller land birds consists of insects and spiders. The insects belong for the most part to the orders Lepidoptera (butterflies and moths), Orthoptera (grasshoppers, locusts, and crickets), Diptera (flies), Hemiptera (bugs), Coleoptera (beetles), and Hymenoptera (ants, bees, and wasps). Lepidoptera, Orthoptera, and Coleoptera furnish the bulk of the insect food of birds. The lepidopterous food is taken almost entirely in the larval condition, and comprises smooth caterpillars belonging largely to the family Noctuidæ, which includes cutworms (see fig. 1), army worms, and their allies. The Orthoptera eaten are principally long- and short-horned grasshoppers (Locustidæ and Acrididæ—see fig. 2). Coleoptera form a most important element of bird food, the families of this order most largely represented being the Scarabæidæ or scarabæid beetles, the Carabidæ or ground-beetles, the Elateridæ or click-beetles, the Chrysomelidæ or leaf-beetles, and the Rhynchophora or weevils. Some of the scarabæids that are eaten are the clumsy brown May-beetles and their allies, which feed on growing plants; others comprise a group of beetles commonly known as dung-beetles, because they subsist on the droppings of animals. Ground-beetles are alert, active insects, carnivorous in food habits. Click-beetles are narrow and hard-shelled; when disturbed, they curl up and 'play possum' until the danger appears to be past, when they spring into the air by spasmodically straightening out their bodies with a sharp clicking sound. Their larvæ, wireworms, are often very destructive to crops. The leaf-beetles (see fig. 3) taken by birds are pests of little economic importance. Weevils (see fig. 4) constitute a destructive class of insect pests, and are extensively preyed on. Diptera furnish no significant part of the food of birds, though the slow-moving crane-flies (Tipulidæ) and midges (Chironomidæ) are at times snapped up, and some larval Diptera are occasionally eaten. The Hemiptera include both leaf-hoppers (Jassidæ), which derive their sustenance by probing plants with their sucking beaks, and true bugs, which are flat, bad-smelling insects. Some of the bugs feed like leaf-hoppers on the juices of plants, while others are predatory and subsist on succulent insects. The hymenopterous element of bird food is composed of ants, wasps, and a few small bees, the wasps including flower-fertilizing species and parasitic species of the families Ichneumonidæ (see fig. 5), Braconidæ, and Scoliidæ.

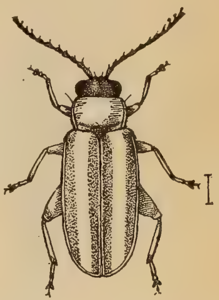

FIG. 3.—Leaf-beetle (*Systena blanda*) (after Chittenden; loaned by Division of Entomology).

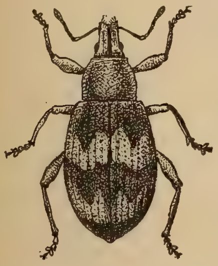

FIG. 4.—Weevil (after Chittenden; loaned by Division of Entomology).

The value of a bird as an insect destroyer depends upon the value of the insects it consumes. Each insect eaten by birds must of necessity be injurious, beneficial, or neutral in its effect on crops, though it is not always easy to classify it properly. While present information is sufficient to fix the status of some with sufficient accuracy for all practical purposes, in the case of others more light is needed. The smaller dung-feeding scarabæid beetles appear to have little or no effect upon agriculture. The great majority of ants have habits which are apparently of little interest to the agriculturist;

and although some (of the genus *Lasius*), and perhaps others, possess certain injurious traits, while a few may have traits that are beneficial, yet the effects in any event are of minor importance; so that ants as a whole may safely be classed as neutral. Spiders, which for purposes of convenience are here classed with insects, are carnivorous, but their prey seems to include about as many beneficial insects as pests. The damage done by weevils, grasshoppers, and smooth caterpillars is notorious. Cutworms and army worms often do an immense amount of harm, and grasshoppers frequently occur in such voracious hosts that they sweep away every vestige of green vegetation before them. On the other hand, carnivorous ground-beetles (Carabidæ, see fig. 6) kill multitudes of insect pests, and certain parasitic wasp-like hymenopterous insects of the families Braconidæ, Chalcididæ, and Ichneumonidæ destroy great numbers of caterpillars. One of these parasitic insects will deposit in the back of a caterpillar from 20 to 2,000 eggs, which soon hatch into grub-like larvæ that feed upon the fatty tissues and exhaust the caterpillar so that it is not able to transform into a perfect insect.

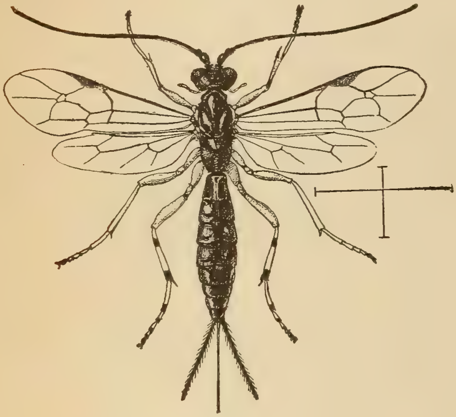
FIG. 5.—Ichneumon fly (after Howard; loaned by Division of Entomology).

The fact that birds do not discriminate between insects that aid the farmer, such as parasitic Hymenoptera and carnivorous ground-beetles, and those that are harmful to his interests, led the entomologist, Benjamin D. Walsh, to deny their usefulness as insect destroyers. He asserts that the good done by the consumption of insect pests is more than counterbalanced by the destruction of useful species. His argument is that there are thirty times as many individual insect pests as there are insect enemies which subsist upon them, and that therefore no insectivorous bird can be considered a 'public benefactor' until it can be shown to destroy at least thirty times as many injurious as beneficial insects.[1] Applied to the destruction by birds of highly effective parasites of important pests which annually or at intervals cause a large loss to staple crops, Walsh's statement

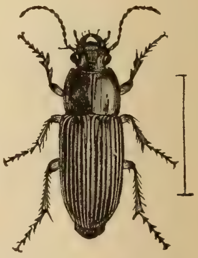
FIG. 6.—Ground-beetle (after Riley; loaned by Division of Entomology).

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[1] Practical Entomologist, Vol. II, No. 4, p. 47, 1867.

is probably adequate. But these conditions are seldom realized, and under any other so many factors are involved that the question is too complex to be so simply determined. A discussion of what is necessary to be considered in order to determine the status of a bird will be found in the chapter on 'Classification of Bird Food' (pp. 16–18).

METHODS OF INVESTIGATION.

Knowledge of the food habits of birds is of great importance in rural economy. Ignorance of this subject is in part responsible for the grave mistake which was made in the introduction of the English sparrow. To the same cause has been due the passage of bounty laws for the encouragement of the indiscriminate slaughter of hawks and owls, notwithstanding the fact that some of these birds of prey are highly beneficial to agriculture. To obtain adequate knowledge of the food of birds in relation to agriculture a definite scheme of procedure must be followed. Simply observing the birds while they are feeding gives only fragmentary information and has often resulted in the protection of injurious or the persecution of beneficial species. The results thus obtained must be supplemented by other and corroboratory evidence. Recent investigations by the Biological Survey have been carried out by the following methods: (1) Observation of birds in the field; (2) experiments with captive birds; (3) examination of the contents of stomachs; and (4) a combination of field work and stomach examination. Economic ornithology is as yet so little advanced that a detailed account of these methods will not be amiss.

FIELD WORK.

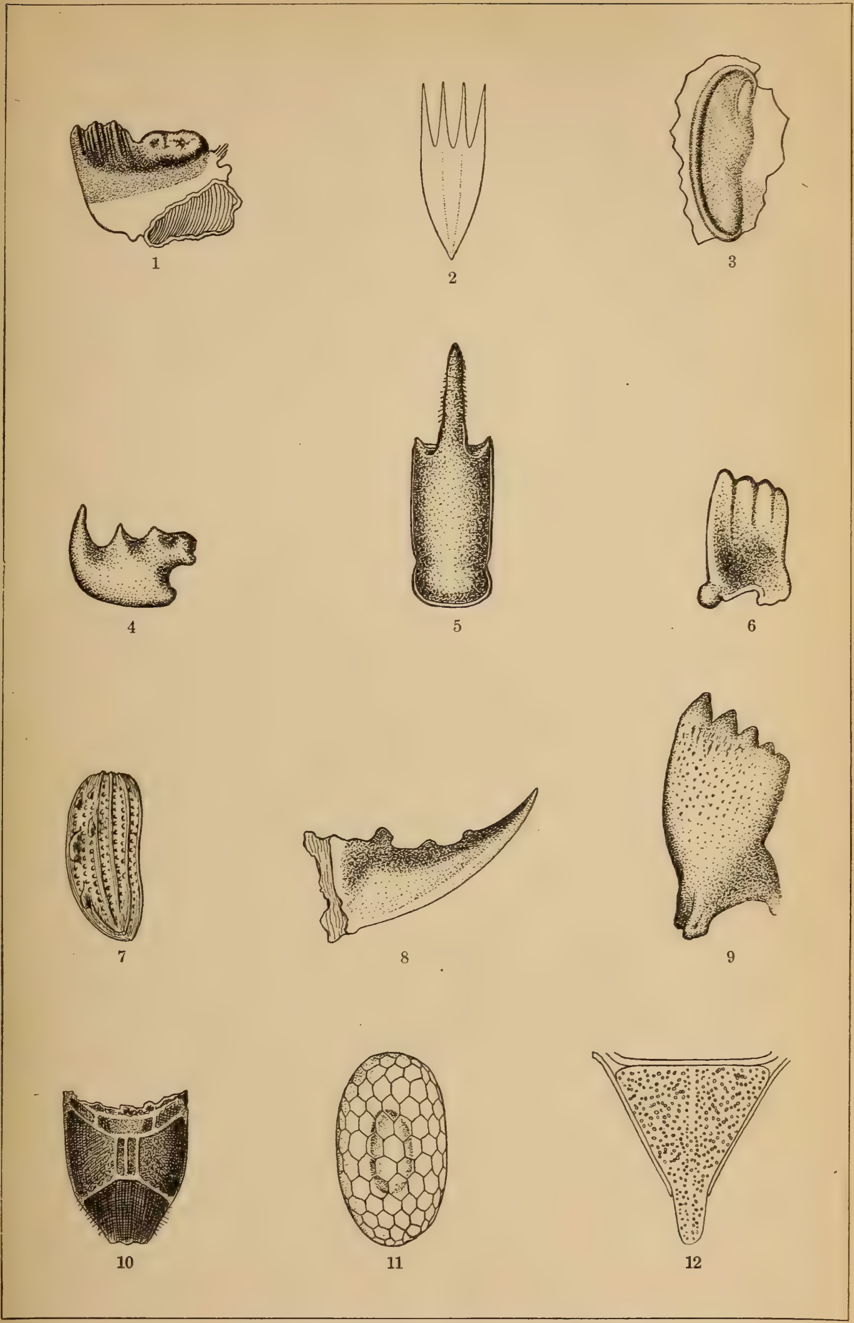
Field work, as stated, yields results which must not be considered as a final solution of the problem, but only as a contribution to our knowledge. Nevertheless, it is indispensable as a part of the investigation, since the actual amount of damage done to ripening fruit or to grain or the good done by the destruction of weed seed or insect pests by native birds can best be determined, in dollars and cents, by careful study of the scene of action. As an illustration of damage that could not have been ascertained by any other means an instance may be cited of a ripening oat field of 3 or 4 acres that was visited by a flock of about 100 goldfinches, where the quantity of grain actually eaten was insignificant, but a loss of 5 percent of the crop was caused on about an acre by the birds, breaking down the stalks so as to make it impossible to reap at that point. The extent of the good done by sparrows in destroying the seeds of pigeon-grass, ragweed, and similar weeds can be definitely ascertained only by visiting the field in late winter and observing the proportional extent of destruction. Such visits will often show that more than nine-tenths of the seeds produced have been destroyed. Field observation is useful also in ascertaining the food habits of nestling birds. Although the work of identifying in the parent's beak the insects usually fed to nestling birds is exceedingly difficult, yet it yields more satisfactory results than examination of the stomachs of the nestlings, not only because stomach examination shows nothing as to frequency of meals, but also because the soft insects given by most of the smaller birds to their young are generally unidentifiable in the stomach.

EXPERIMENTS WITH CAPTIVE BIRDS.

Very often birds that are too shy to be watched in the field may be kept in captivity and experimented with. If the experiments are carefully conducted much can be learned as to the amount of food eaten, preferences in food, and questions relating to the dissemination of the seeds of fruit and weeds by birds. Birds selected for experiment should be recently trapped, because those that have been long in confinement usually develop unnatural tastes. In testing preferences in insect food it is convenient to place the insects on a piece of cork anchored in the center of a bowl of water. This prevents them from escaping and makes the conditions almost identical in the case of each kind. The insects should be equal in volume. Thus, a fair experiment would be made if a ladybird (*Coccinella 9-notata*) and a 12-spotted cucumber beetle (*Diabrotica 12-punctata*) were both put on the cork island at once for the bird to select from, because both insects are of about the same size. The same principles apply to fruits and seeds, though, of course, the use of the cork is not important in their case. The food of nestling birds may be sometimes studied to advantage by removing the young from the nest and placing them in a cage almost out of reach of the parent bird, so that in feeding them the latter will drop a large proportion of the food just inside the cage.

LABORATORY EXAMINATION OF STOMACHS.

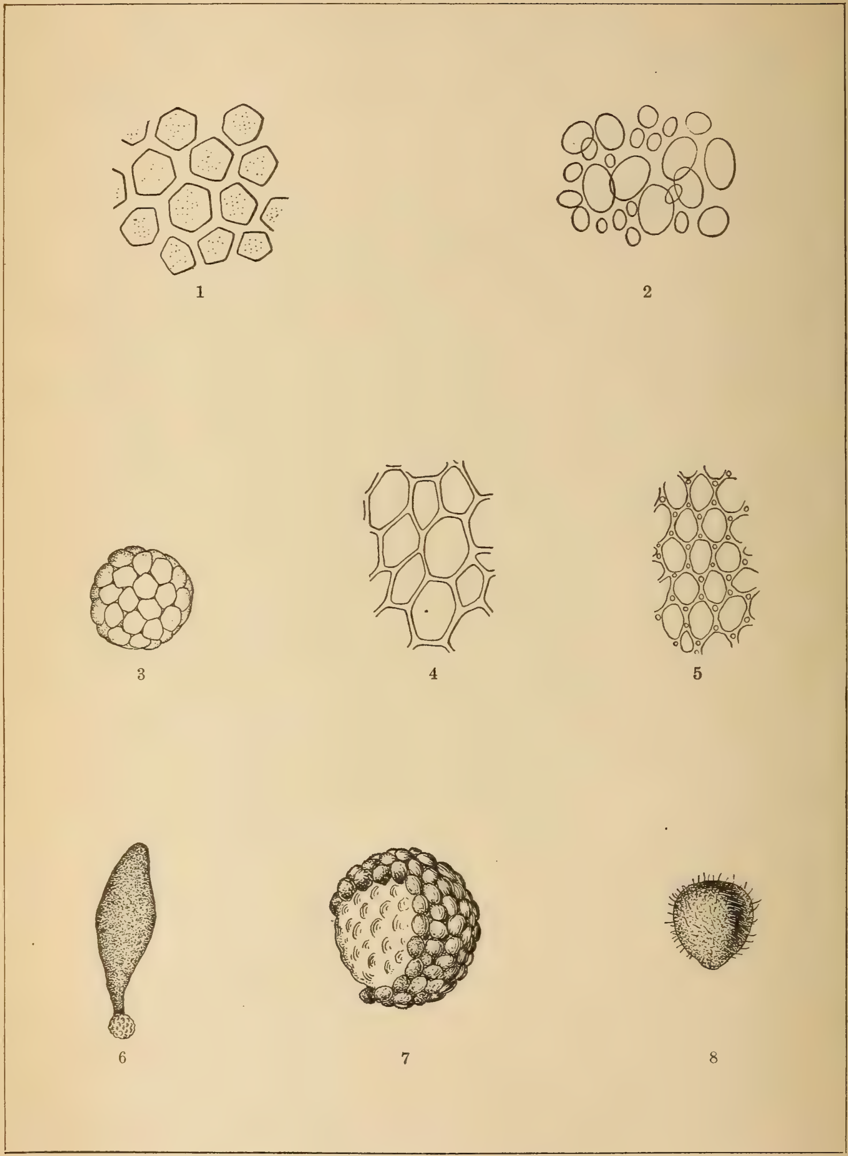
The contents of the crops (or gullets) and stomachs of wild birds are examined to find just what elements of food the bird has chosen and the proportion each bears to the total amount of food; and if the number of stomachs examined be large enough, the difference due to individual variation is eliminated. The identification of the food found in a bird's stomach is difficult, for two reasons: (1) Because of the great variety of substances that may be found in the stomach, and (2) because of the fact that the semi-digested pieces and fragments of insects, fruits, and seeds are often so comminuted that exact identification is well-nigh impossible. The method of procedure employed in the laboratory of the Biological Survey in making stomach examinations is as follows: The stomach is slit open with a scalpel, and its contents are first washed into a pan by a jet of water from a wash bottle and then, with the exception of the sand and gravel, poured into a



FRAGMENTS OF INSECTS FOUND IN BIRDS' STOMACHS.

1. Mandible of grasshopper.
2. Scale of moth.
3. Tibio-femoral plate of grasshopper.
4. Clasper of May-beetle.
5. Prosternum of click-beetle.
6. Mandible of cutworm.
7. Wing-cover of weevil.
8. Mandible of larval ground-beetle.
9. Mandible of ant.
10. Mesothorax of black wasp.
11. Egg of May fly.
12. Scutellum of bug.

PLATE III.



FRAGMENTS OF GRAIN AND FRUIT FOUND IN BIRDS' STOMACHS.

1. Starch grains of corn.
2. Starch grains of wheat.
3. Starch grain of oats.
4. Epidermis of cultivated cherry.
5. Epidermis of wild red cherry.
6. Granule of poison ivy.
7. Bayberry.
8. Granule of bayberry.

beaker. The beaker is then held under a faucet, so that the rush of water will cause whatever insect remains may be present to float to the surface, where they can be decanted off with a filter of bolting cloth. The remaining matter in the beaker (generally seeds and fruit skin) is then collected on another filter, and from the two filters the material is transferred by means of a scalpel to separate smooth blotters about 3 inches square, and is ready for examination. Examinations are usually made with a dissecting microscope furnished with an achromatic triplet lens, but occasionally it is necessary to employ the higher powers of the compound microscope.

The principal difficulty arises from the fact that birds often mutilate their food before swallowing it, and the gizzard afterwards reduces it to fine fragments. A song sparrow, for example, will seize a grasshopper, pinch it a dozen times, pull off and eat the head, pull off the legs and wings and then swallow the abdomen, leaving the other parts. In the gizzard, with its powerful muscular walls, the reduction of the insect is more complete, so that usually within two hours only a few bits of grasshopper dust remain. It is with such material that the examiner has most often to deal. But with practice his eye quickly detects amidst this dust a squarish, bicolored jaw with a grooved cutting-edge behind which is a grinder (see Pl. II, fig. 1). If the jaw is lacking, a little search seldom fails to reveal a tiny piece that looks like a human ear, but in reality is part of the knee-joint of the grasshopper (see Pl. II, fig. 3).

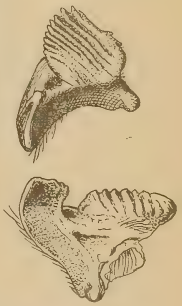


Fig. 7.—Jaw of May-beetle (top and side views).

The remains of caterpillars found in bird stomachs usually consist of the discolored broken skin, which has been twisted and rolled into compact little packets by the action of the stomach. Sometimes nothing is left by which to identify the insect except the concave jaws, the prominent spherical condyles of which, however, are unmistakable (see Pl. II, fig. 8). Butterflies and moths may be distinguished by the tiny tooth-scales of the wing (see Pl. II, fig. 2) when the naked eye is unable to detect the presence of these insects. Beetles resist digestion more than caterpillars and grasshoppers, consequently pieces of their hard shells may be found in the stomachs for some time. These and other fragments serve to distinguish the different kinds. The hard parts of the genital organs of different species of May-beetles (see Pl. II, fig. 4) are very distinctive in character, and so afford ready means of identification. The blunt, curiously shaped jaws (see fig. 7) are also characteristic. The hinged body of a click-beetle is provided with a tooth which strikes against half of the hinge and causes the click that is heard as the beetle springs into the air (see Pl. II, fig. 4). This tooth when met with in a bird's stomach is often broken off from the body, and is sometimes all that is left to show that a click-beetle has been eaten. The pitted, earthenware-like wing-covers of weevils (see Pl. II, fig. 7) and the curved, sharp jaws of ground-beetle larvæ are easily recognizable (see Pl. II, fig. 7). The identification of Hymenoptera is much more difficult, as the distinguishing features are found mostly in the veining of the delicate wings, which are exceedingly perishable. Ants, however, can always be recognized by the very hard jaws even when the action of the stomach has practically reduced the insect to dust (see Pl. II, fig. 9). Certain black wasps (*Tiphiă inornata*) often eaten by birds may be recognized in the stomach by the presence of a tiny piece of the crust of the insect's back (mesothorax), which is sculptured by three parallel raised ridges (see Pl. II, fig. 10). The presence of female May-flies can usually be detected by means of the prettily reticulated eggs from within the insect's body and the golden globule of oil each contains (see Pl. II, fig. 11). Bugs (Heteroptera) may be determined by their back shields (scutella), which are marked with dark dots and in shape closely resemble equilateral triangles (see Pl. II, fig. 12); spiders by their jaws, which look like miniature cow horns, and their minute eyes, which resemble clusters of gleaming gems (see fig. 8). The remains of earthworms are identified with the compound microscope, the high-power lenses of which reveal the characteristic amber-colored S-shaped spicules (see fig. 9) with which the bodies of the worms are beset. These lenses are also employed in identifying bits of the skin of fruits and pasty masses of the endosperm, or meaty part, of seeds. Differences can thus be perceived in the structure of the epidermis of many fruits (see Pl. III, figs. 4 and 5) and the starch grains of common cereals (see Pl. III, figs. 1, 2, and 3). When a bird has eaten poison ivy there often remains nothing of the fruit except certain black, club-shaped bodies (see Pl. III, fig. 6) which coat the stone below the white skin of the fruit. The stones of bayberries are similarly covered with small granules (see Pl. III, figs. 7 and 8), which furnish the clew in each case when the stones are absent.

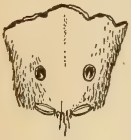


FIG. 8.—Eyes of spider.

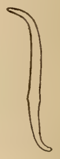


FIG. 9.—Spicule of earthworm.

After each element in a bird's stomach has been identified and placed in a separate pile, the percentages of the different elements are estimated by volume.[1] In recording the results of examinations a separate record is made for each species and for each month. Monthly averages are based on the number of stomachs collected in the month, but yearly averages are determined from the monthly averages; for unless the collections of stomachs were much more evenly distributed as to months than they are at present, an average based directly on the number of stomachs collected in the year would be misleading.

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[1] Of course it must be understood that mathematical exactness is not attainable in these examinations; but every possible means is taken to reduce the error to a minimum, and with a sufficient number of stomachs a very correct idea may be obtained of the proportions of the different elements of the food.

COMBINATION OF FIELD AND LABORATORY WORK.

Although the examination of a bird's stomach shows just what the bird has eaten, yet if this alone be depended upon information is still wanting as to what has been refused or what preferences exist, since the different elements of the food supply in the locality where the stomach was collected are not taken into account. If, however, this lacking information be obtained by means of field observation and used in connection with stomach examination, the examiner will be enabled to make his analyses with the fullest degree of accuracy.

In pursuance of this plan I have for several years systematically visited various farms in the neighborhood of Washington and collected data and material relating to the available food supply, to be used in connection with the examination of the stomach contents of birds collected in these localities. One example will serve to illustrate this method. On May 13 and 18, 1898, I visited a farm of 75 acres, mostly under cultivation, which was situated in a shallow depression surrounded by woodlands. It was traversed by three small bushy brooks, which ran among some cabbage plats, apple orchards, and cornfields (some newly sown and some with the last season's stalks). Between the cabbage rows was chickweed; in the apple orchard were the last year's stalks of lamb's-quarters with but few seeds, and in the old cornfield were great quantities of pigeon-grass and smartweed, though scarcely any seeds were left. Birds were numerous along the brooks and ran out into the fields among the dead weed-stalks, picking up food from the ground. The kinds of insects present were carefully noted and then the birds were watched with a glass for two hours, after which 17 sparrows, including field, chipping, white-throated, English, song, and Lincoln's sparrows, were collected and their stomachs examined. Four had eaten seeds of lamb's-quarters and smartweed; 5, chickweed; and 6, crab-grass and pigeon-grass; 5 had taken cutworms (whose ravages had made it necessary to replant the cabbages twice); 6 had eaten small dung-beetles, and 10 had eaten weevils, specimens of which had been previously taken with a net on strawberry and clover. A dozen grasshoppers had also been collected, but only 2 birds had eaten any. Useful predaceous ground-beetles (Carabidæ) were very numerous and easily accessible, but the sparrows had eaten only one, while several other birds shot at the same place had eaten freely of them.

From the knowledge gained by the study on this farm one could, with a fair degree of accuracy, predict what kind of food sparrows would eat on another farm where the food supply was identical. This line of research might be continued until it could be foretold with reasonable certainty which of the different objects in the accessible food supply of a locality a given bird would probably select.

In recapitulation it may be stated that in the investigation of the food habits of any bird the first thing to be done is to examine enough stomachs to obtain a general idea of the bird's food, so that intelligent field work may be done. Then the observer should go to some favorable spot, note carefully the different kinds of available food, watch the birds feeding for a while, and collect stomachs for examination. In this way it will be possible to ascertain what a bird will eat, what it prefers, and what it will refuse.

CLASSIFICATION OF BIRD FOOD.

To aid in reaching final conclusions as to the economic position of a bird it has been found convenient to divide the food into three categories according as its consumption tends to produce a (1) beneficial, (2) injurious, or (3) inappreciable effect on agriculture. The beneficial part consists chiefly of insect pests and weed seed, the injurious part consists largely of insect enemies of insect pests and plunder from cultivated crops, and the neutral part comprises neutral insects and the fruits and seeds of plants of no economic importance. The relations which these three parts of the food bear to one another determine in large measure the economic status of a bird.

Of course, there can be no hard and fast rule in the matter. The beneficial and injurious elements of the food are marked by infinite degrees of gradation, and quality must be considered as well as quantity. The importance of the consumption of wheat varies greatly according to whether the grain is taken from the newly sown field, the growing crop, the stubble, or the shock. Insects may be either serious pests or insignificant in power to damage crops, with every shade of injuriousness between these extremes.

The abundance of a bird has also much weight in fixing its value. A species must be numerous, must live among cultivated crops, and must take food that has a close connection with agriculture in order to produce any significant effect on the farm.

The neutral element of the food must not be overlooked. The greater its proportion the more abundant must the bird be in order to produce any effect either one way or the other. With many shore and woodland birds it is so large, in comparison with the injurious or beneficial parts, that it is likely that such birds have scarcely any effect in rural economy.

These and many other like factors have to be considered in deciding a bird's economic status; but for a rough general estimate it is safe to assume that a bird that feeds on insects, seeds, and fruit, and is abundant on a farm, will do more good than harm, and usually be worthy of protection when the neutral part of its food forms less than half of its entire food and its beneficial food amounts to several times its injurious food. The native sparrows, it may be added, seem to satisfy these conditions better than any other equally large group of birds.

Exceptional habits must also be considered in determining a bird's value, for they sometimes overshadow in importance the general food habits. Thus a single species or several allied species may become exceptionally abundant for a month or two in a very limited district devoted largely to a single crop on which they feed. An illustration of this is the autumnal migration of bobolinks and red-winged blackbirds when the birds converge and swarm into the limited area of the rice districts so as to destroy annually $2,000,000 worth of the crop.[1] Some species of birds act as agents in the distribution of the seeds of noxious plants, as in the case of the crow, which is in a measure responsible for the widespread distribution of poison ivy. Certain species which have beneficial food habits themselves destroy still more useful species, as exemplified by the cowbird when it parasitizes the song sparrow. The English sparrow, which does more good than harm to vegetation in the city park (though it has objectionable food habits in rural districts), overbalances this good and becomes a pest because of its filthy habits.

But it is not easy to determine the exact relation of birds to agriculture, even though all the constituents of the food are known; for the actual ratio of benefit to injury in the food habits can only be roughly approximated, and it is often a question of nice judgment to determine the final status of a particular species. The benefit is usually, if not invariably, indirect, while the injury may be either direct or indirect. When the English sparrow steals food from a flock of chickens the harm is direct; but when it preys on *Tiphia inornata*, a species of wasp, it is doing an indirect harm, because this wasp parasitizes the larvæ of May-beetles, which are exceedingly injurious to crops. So, too, when the chipping sparrow feeds on the cabbage worm (*Pieris rapæ*) it is accomplishing an indirect good, because if the worms increased unduly they would destroy the whole cabbage patch.

While the direct effects are easily observable, the indirect effects are usually obscured. Their complexity is frequently baffling to the investigator who is in search of economic conclusions. One is brought face to face with most perplexing problems resulting from the interaction of organisms—problems which not only embrace the complex interrelations among animals and plants, but also include the relations of organic life to its inorganic environment. The drawing of sound economic conclusions is impossible until the far-reaching influence of this interaction is at least thoroughly appreciated if not entirely understood. The difficulties involved are well illustrated by certain observations made by Dr. J. A. Allen. He found the tree, chipping, field, and white-throated sparrows, and the junco preying upon an insect pest of the apple, the apple-tree plant-louse (*Schizoneura lanigera*).[1] This was, of course, a beneficial effect rendered by the birds, but at the same time they were killing the larvæ of the ladybirds, lacewings, and syrphus flies, which were also destroying the plant-lice. It would be necessary to ascertain to what extent the evil effect of killing the enemies of the plant-louse counterbalanced the good effect of killing the plant-louse itself before the final effect of the sparrows upon apple culture could be determined.

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[1] Ann. Report Dept. of Agr., for 1886, p. 247, 1887.

RECAPITULATION.

By keeping in mind the exceptional ways in which birds become pests, and by inspection of the food elements of sparrows through the different methods of investigation heretofore described, more especially through the combination of field work with stomach examination, and further by the classification of these elements of the food into their neutral, beneficial, and injurious categories the effect of sparrows on cultivated crops can be approximately ascertained.

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[1] *Vide* B. D. Walsh in The Practical Entomologist, Vol. II, No. 4, p. 46, 1867.

FOOD OF SPARROWS.

The following conclusions upon the relations of sparrows to agriculture are based upon the study of the food habits of a score of species,[1] and have involved the examination of the contents of the stomachs of more than 4,000 individuals. These stomachs were collected during every month in the year from a large expanse of country, including practically all the States in the Union and the southern part of the Dominion of Canada.

MINERAL SUBSTANCES FOUND IN SPARROWS' STOMACHS.

Mineral matter plays a part in the digestion of sparrows and often amounts to one-tenth or one-quarter of the total contents of a stomach. These birds are preeminently seed eaters. Insectivorous birds with soft, weak bills and thin membranous stomachs could not possibly eat and digest a meal of tough, resisting seeds; but the hard, strong beaks and powerful, muscular gizzards of sparrows are admirably adapted to such a diet. Sparrows swallow the smaller seeds whole, but crack the larger ones. To aid digestion they pick up, while feeding, coarse bits of sand and tiny stones, which, in their mill-like gizzards, soon grind the seed material into a paste that can be as easily digested and assimilated as if it had been chewed by teeth. This mineral matter usually consists of angular white or pink pebbles of quartz from 2 to 5 mm. in diameter. Pieces of feldspar, tourmaline, mica, and even volcanic lava are sometimes found, and in Kansas the birds often utilize the disk-like sections of stems of fossil sea-lilies (*Crinoidea*—see fig. 10). A sooty grouse taken in British Columbia had swallowed for this purpose four little nuggets of gold.[2]

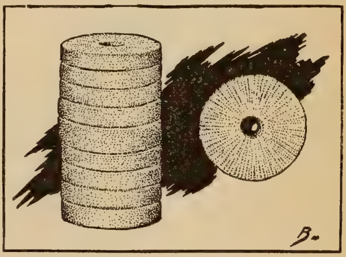

FIG. 10.—Section of stem of fossil sea-lily.

FOOD IN GENERAL.

Of the food of sparrows, animal matter composes from 25 to 35 percent of the diet for the entire year, and vegetable matter from 65 to 75 percent. The animal food consists of insects and spiders and occasionally includes snails or millipedes; insects—mainly grasshoppers, beetles, and caterpillars—constitute more than nine-tenths. The vegetable food is composed almost entirely of seeds, although it also comprises a small quantity of fruit.

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[1] The remainder of the native sparrows, which are mostly birds of more or less limited numbers or restricted distribution, are not considered in this bulletin, owing to lack of material for adequate study.

[2] Forest and Stream, Vol. XXXIV, p. 431, 1890.

FOOD NEUTRAL IN EFFECT ON AGRICULTURE.

The neutral part of this food is made up principally of certain insects, spiders and snails, a small amount of wild fruit, and some seeds of useless plants. Insects form about four-fifths of the animal matter of the neutral part, comprising ants and certain kinds of flies and beetles. The flies, which are usually adult insects, but sometimes larvæ, include midges (Chironomidæ), flies related to the housefly (Muscidæ), March-flies (Bibionidæ), and crane-flies (Tipulidæ). These insects never amount to 1 percent of the volume of the entire food of any species of sparrow for the whole year. May-flies (Ephemeridæ), emerging from the water by the million, are preyed on by the sparrows that dwell in the immediate vicinity of streams or ponds. Ants seldom equal 2 percent of the volume of the year's food. Both typical ants (Formicidæ) and myrmicids (Myrmicidæ) are taken. Such ants as *Formica fusca* and *F. subsericia*, *Lasius*, *Myrmica*, and *Tetramorium* are frequently selected. They are often eaten while yet in the winged state and are then caught in the air. Beetles of little or no economic importance amount to from 3 to 5 percent of the total volume of the food for the entire year. These are for the most part dung-feeding species belonging to the genera *Aphodius* (see fig. 11), *Atænius*, *Onthophagus*, and *Hister*. They are often found by hundreds in cow droppings in pastures.

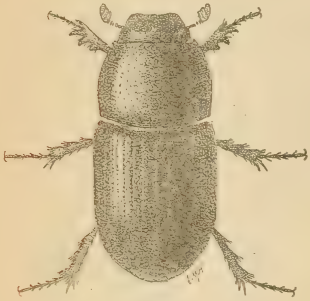
FIG. 11.—Dung-beetle (*Aphodius*) (loaned by Prof. S. A. Forbes).

The remainder of the neutral part of the food is made up of spiders and snails. Spiders, though predatory, have not as yet been classed as useful, because, as already stated, as a group they seem to destroy about as many beneficial as injurious insects. The kind most frequently eaten by sparrows are the running ground-spiders, which, though probably more useful than harmful, are of too little importance to be classed otherwise than as neutral. They constitute 1 to 3 percent of the food. A few snails are eaten. These are as a rule not injurious; and though an exception should be made of the pond snail (*Limnæa*), which acts as intermediate host to the liver fluke, a pest to sheep raisers, probably very few if any of these are included among the small number of snails actually eaten, and they may be disregarded.

FOOD INJURIOUS IN EFFECT ON AGRICULTURE.

The injurious part of the food of sparrows, the removal of which tends to cause a harmful effect upon crops, is made up of useful insects and spoils from cultivated crops, such as grain and fruit. Beneficial insects seldom amount to more than 2 percent of the food. They consist mostly of enemies of insect pests and a very few flower-fertilizing species, such as certain wasps and some small bees of the genera *Andrena* and *Halictus*. The insect enemies are either ground-beetles (Carabidæ) or parasitic wasps. The particular ground-beetles selected belong to the less useful predatory kinds. They are small species, the exact economic position of which is not yet known, and include *Amara*, *Anisodactylus*, *Agonoderus*, *Bembidium*, and the smaller species of *Harpalus*. One species—*Agonoderus pallipes*—has been found injurious to grain, and in time it and some other slightly carnivorous carabids may become pests like the related *Zabrus gibbus* of Europe. The parasitic Hymenoptera include such wasps as the smaller Ichneumonidæ, the larger Braconidæ, and Scoliidæ of the genera *Myzine* and *Tiphia*. But the quantity of useful insects eaten by sparrows is small; omitting those taken by the English and field sparrows, it is insignificant. And though 4 percent of the food of the latter consists of useful insects—a larger percentage than is attained by any other member of the sparrow family—yet this record is very favorable compared with those of many birds. The loggerhead shrike and the king-bird, for example, take 12 percent and 20 percent, respectively, of their food in beneficial insects, and there are other birds whose records are still less creditable.

Cultivated fruit forms no significant part of the food of sparrows. The white-crowned sparrow occasionally punctures a few grapes in the East; the English sparrow adds more or less fruit destruction to his many other sins; and it is probable that one or two western species do some little damage of this kind: but with these exceptions the sparrow family is harmless to orchard and vineyard.

The English sparrow does so much damage to grain that it is considered a pest, and the native sparrows might naturally be suspected of having similar habits; but though they frequently sample grain in stubble-fields, they have not as yet been found committing serious depredations. In order to compare the grain-eating propensities of the various species, specimens were collected on a farm a few miles south of Washington, D. C., before and after the wheat was cut. Of nineteen native birds, representing song, field, chipping, and grasshopper sparrows, only two had eaten grain, and these had taken only one kernel each, while, on the other hand, of five English sparrows that were examined every one was gorged with wheat. On this particular farm flocks of English sparrows pillage the wheat crop from the time it comes in milk until it is threshed; and attack corn in the roasting-ear stage, and feed on it from the time it is put in the crib until wheat comes in the milk again in June. There is scarcely a grain that they do not injure, while with the native sparrows the reverse seems to be true. The latter eat a little grain, but seldom does it amount to more than 5 percent of the year's food, a modest fee for their service when it is considered that the meadowlark, one of the best birds of the farm, takes 13 percent of its food in grain, the crow 35 percent, and the crow blackbird 47 percent.

The most serious charge that can be brought against sparrows is that they distribute noxious plants, the seeds of which pass through their stomachs and germinate when voided from the body; and this, though not strictly germane to the subject under consideration, will be treated of here as the most appropriate place. Sparrows do not distribute catbrier, poison sumach, and poison ivy, as do many birds, but it is probable that they do, to a certain extent, disperse the seeds of such weeds as amaranth, gromwell, and spurge. However, it seems likely that this agency of seeding down farms to weeds is infinitesimal when compared with the dispersion of weeds caused by the use of manure containing weed seed and the planting of impure seed, which often contains seeds of foreign weeds of the worst stamp. The digestive apparatus of sparrows has the power to crack or crush the seeds of crab-grass, pigeon-grass, pigweed, lamb's-quarters, and most other seeds, including the hard drupes of the blackberry. I have examined thousands of stomachs of sparrows containing ragweed, and have never found an unbroken seed. The outer ribbed shell of the akene is cracked and not swallowed, but parts of the true seed coat in the shape of angular fragments 3 to 5 mm. long, which are dirty gray externally and greenish white internally, are usually found during stomach examination. Uncrushed cotyledons are seldom met with. These facts, which hold also when seeds of wild sunflowers and polygonums are eaten, seem to preclude the possibility of subsequent germination. Concerning the likelihood of the germination of the seeds of weeds that are grasses it may be stated that time and again tree sparrows which have fed on pigeon-grass have been examined, and it has been found that while their gullets contained from 100 to 300 whole pigeon-grass seeds with the inner glumes removed, the gizzards were filled with a pasty mass of endosperm containing not more than a dozen whole seeds. But with the harder, smaller seeds the possibility of germination is better. The digestive organs, although they have the power of cracking such seeds, nevertheless occasionally allow some to pass out in a perfect condition, as was shown by an experiment with a captive song sparrow in which amaranth seeds were voided uninjured and germinated very well. Birds take seeds for food, however, and it seems probable that such use would preclude the evacuation of any but a most insignificant proportion of uninjured seeds.

FOOD BENEFICIAL IN EFFECT ON AGRICULTURE.

The beneficial part of the food of sparrows is made up of insect pests and the seeds of weeds. Insect pests amount to from 10 to 20 percent of the year's food, and are for the most part grasshoppers (Acrididæ and Locustidæ), caterpillars, principally Noctuidæ (that is, cutworms, army worms, and their allies) and some Geometridæ, such as cankerworms and their allies, and beetles of various families—Chrysomelidæ or leaf-beetles, Elateridæ or click-beetles, and Rhynchophora or weevils. Conspicuous among the genera of beetles met with in stomachs of birds are *Systena*, *Epitrix*, *Odontota*, *Limonius*, *Drasterius*, *Sitones*, and *Phytonomus*. Bugs are eaten to an unimportant extent, and constitute about 1 percent of the food. The plant-feeding forms include such Heteroptera as some of the smaller soldier bugs (Pentatomidæ), leaf-bugs (Capsidæ), a few such Homoptera as leaf-hoppers (Jassidæ), and in very rare instances plant-lice (Aphididæ). Insects seldom form more than a third of the food of adult sparrows for the year, but their nestlings are practically entirely insectivorous; on which account these birds, in raising from two to three broods a season among agricultural crops, do their greatest good as destroyers of insect pests by cramming countless numbers of caterpillars and grasshoppers down the throats of their ravenous young. Some grasshoppers are much more injurious than others. The most destructive species is the Rocky Mountain locust (*Melanoplus spretus*—see fig. 12), which at intervals invades the plains of the central United States in such numbers as to actually hide the sun. These insects travel onward, sweeping away every vestige of green vegetation in their path, and bringing destruction and desolation to thousands of farms. As shown by the investigations of Prof. Samuel Aughey in Nebraska,[1] the native sparrows perform a useful part in aiding to check these invasions.

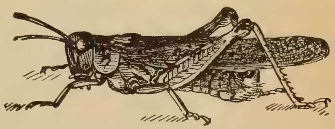

FIG. 12.—Rocky Mountain locust (after Riley; loaned by Division of Entomology).

In studying the efficiency of birds in checking an uprising of the cankerworm (*Anisopteryx vernata*) in Illinois, Prof. S. A. Forbes collected birds in a bearing apple orchard which had been so injured by the worms for several years that it looked as though it had been swept by fire. Among these birds were the grasshopper sparrow, the chipping sparrow, the field sparrow, and the dickcissel. The examination of their stomachs showed that although cankerworms were not eaten by the grasshopper sparrow, they amounted to 16⅔ percent of the food of the chipping sparrow, 23½ percent of that of the field sparrow, and 43 percent of that of the dickcissel.[2] Nearly all sparrows prey on cankerworms and other members of the family Geometridæ. They also have a decided taste for cutworms, army worms, and their allies, in destroying which the song, field, chipping, grasshopper, and lark sparrows, and the dickcissel are especially effective.

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[1] First Ann. Report U. S. Entomological Commission, App. II, pp. 29–32, 1878.

[2] Bull. Ill. State Laboratory Nat. Hist., Vol. I, No. 6, p. 12, 1883.

But adult sparrows can not be depended upon to check invasions of certain insect pests, especially hairy caterpillars, because they do not eat them. With orchard trees and others festooned with the webs of the fall webworm, I have seen the sparrows, although they were abundant in the vicinity, refuse these insects and select others. At Marshall Hall, Md., on the level bluff across the Potomac from Mount Vernon, is a fertile farm, on which the field habits of sparrows have been carefully studied (see pp. 29–45). On this farm during August, 1898, the tobacco worms practically ruined the tobacco crop. I collected there at that time 50 sparrows, representing the chipping, song, field, grasshopper, Henslow's, and English sparrows, but subsequent stomach examination showed that only one of these birds had eaten a tobacco worm.

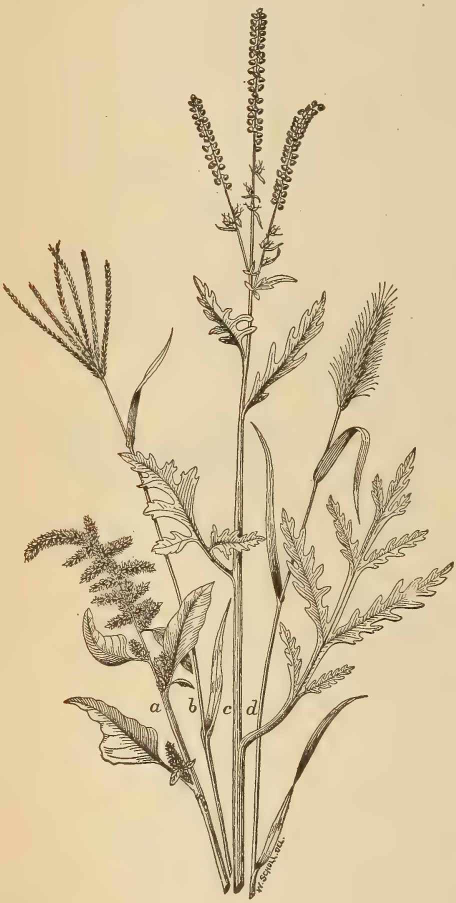

FIG. 13.—Four common weeds the seeds of which are eaten by sparrows: *a*, amaranth; *b*, crab-grass; *c*, ragweed; *d*, pigeon-grass.

Weevils, especially such as injure clover and strawberries, they destroy in large numbers, which is surprising, considering that these insects are hard shelled and protectively colored. They eat some species of leaf-beetles (Chrysomelidæ) also, but refuse others. Thus they avoid the potato beetle (*Doryphora 10-lineata*), the two 12-spotted cucumber beetles (*Diabrotica 12-punctata* and *D. vittata*), and the bean flea-beetle (*Ceratoma trifurcata*), but consume some of the less important pests of the bean. The song, field, and chipping sparrows eat the locust leaf-mining beetle (*Odontota dorsalis*) and two species of striped flea-beetles (*Systena blanda* and *S. elongata*).

But although sparrows render considerable service by helping to reduce the number of insect pests, by far their most important work consists of the wholesale destruction of the seeds of weeds (see fig. 13). Each fall and winter they flock in myriads to agricultural districts and live on the ripened seeds of weeds. As they attack weeds in their most critical stage, that of the seed period, it follows that their services must be of enormous practical value. The benefits are greatest in the case of hoed crops, since among these are found the largest number of annual weeds, which, being killed by frost, must depend for perpetuation solely upon seeds. The principal weed seeds prevented by sparrows from germinating are those of ragweed, pigeon-grass, smartweed, purslane, bindweed, crab-grass, lamb's-quarters, chickweed, and amaranth (see fig. 14). It is sometimes asserted that no thrifty farmer will allow these noxious species to ripen seed, but such prevention is practically impossible, because even if all the edges of fields and all waste ground could be cleared, weed patches along ditches, roads, and hedgerows would still remain to disseminate seed to cultivated land. It is in just these places that sparrows congregate in greatest numbers. Some eat more or less weed seed throughout the year, even when insects are most abundant; but their work is chiefly from early autumn until late spring, and is perhaps most noticeable in winter when the ground is white with snow. It is then that the weed patches are all a-twitter with the busy seed-eaters. The birds form animated groups perched on the stalks or darting about on the ground beneath, winding their way in and out among the weeds. So bountiful is the supply, and so eagerly do they avail themselves of it, that the number of seeds consumed by each individual seems beyond the capacity of its little body. It is not at all uncommon for a field sparrow to eat 100 seeds of crab-grass at a single meal. In the stomach of a Nuttall's sparrow have been found 300 seeds of amaranth, and in another 300 seeds of lamb's-quarters; a tree sparrow that was examined had consumed 700 seeds of pigeon-grass at a meal, while a snowflake taken at Beaverdam, Wis., which had been breakfasting in a garden in March, had picked up 1,500 seeds of amaranth.

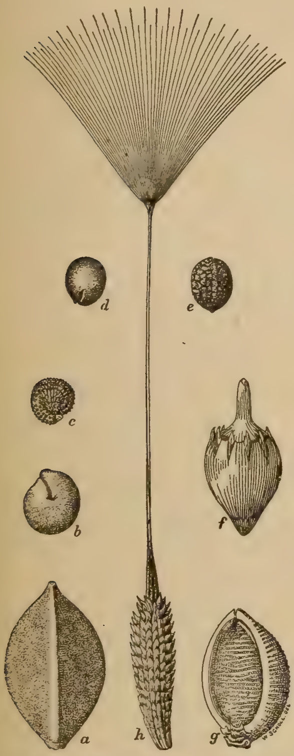

FIG. 14.—Weed seeds commonly eaten by sparrows: *a*, bindweed; *b*, lamb's-quarters; *c*. purslane; *d*, amaranth; *e*, spotted spurge; *f*, ragweed; *g*, pigeon-grass; *h*, dandelion.

English sparrows are also useful destroyers of weed seed. Thousands may be seen every autumn on the lawns of the Department of Agriculture feeding on crab-grass (*Panicum sanguinale*) and yard-grass (*Eleusine indica*), two weeds that crowd out good turf-making grasses. They deserve further credit for their good work in destroying seed of the dandelion (*Taraxacum taraxacum*), which is a prolific weed throughout the United States, especially in lawns and pastures, and is also troublesome in cemeteries. In the public parks of Washington, D. C., the birds eat these seeds from the middle of March until the middle of August, but chiefly in April and the first half of May, when the lawns are full of dandelions. After the yellow bloom has disappeared the head closes and a downy tuft appears at the upper end; in this stage it is most frequently attacked by the English sparrow. The bird removes several long scales of the inner involucre by a clean cut close to the receptacle or base of the head, thus exposing the plumed seeds or akenes. It seizes a mouthful of these akenes, lops off the plumes with its bill, and swallows the seeds. In many cases, especially when hungry, it does not take the trouble to remove the plumes. Generally it drops a score of seeds in tearing open a head, and usually leaves a few clinging to the edge of the receptacle.

The mutilation caused by the bird's beak can be detected until the flower stalk dries and falls. One day I examined every stalk in a rectangular space 6 feet 2 inches long by 3 feet 3 inches wide. Of the 413 stalks collected 358 showed unmistakable marks of the sparrow's bill. On the next day 293 stalks were gathered from a circle 2 feet in diameter on the other side of the lawn, and 275, or 93 percent, proved to be mutilated. These and similar observations made with varying results, covering several years, showed that at least three-fourths of the dandelions that bloom in April and May on the Department lawns are mutilated by birds. In this destruction of dandelion seeds, the English sparrow is aided by several native birds, chiefly the song sparrow, the chipping sparrow, and the white-throated sparrow. So far as observed, the native birds usually do not cut open dandelions, but simply feed on those left by the English sparrow. The song sparrow, however, is capable of getting out seeds alone; for one which was kept in captivity manipulated dandelions in precisely the same way as the English sparrow.

Besides such lawn weeds as dandelions, crab-grass, and yard-grass, several others, including pigeon-grass, knotweed, sedge, oxalis, and chickweed, furnish food for sparrows. These plants are also troublesome in other places than lawns. Knotweed (*Polygonum aviculare*) litters up paths and roads and grows in spots where turf is broken; chickweed (*Alsine media*) occurs in plowed ground; and pigeon-grass (*Chætocloa glauca* and *C. viridis*), which is considered one of the worst of weeds in Minnesota, is found among many crops. The seeds of these weeds are eaten by the song sparrow, chipping sparrow, field sparrow, junco, English sparrow, tree sparrow, Gambel's sparrow, and white-throated and white-crowned sparrows.

Among the weeds which are troublesome in fields, especially among hoed crops, may be mentioned ragweed (*Ambrosia artemisiæfolia*), several species of the genus *Polygonum*—including bindweed (*P. convolvulus*), smartweed (*P. lapathefolium*), and knotweed (*P. aviculare*)—pigweed (*Amaranthus retroflexus*, and other species), nut-grass and other sedges (*Cyperaceœ*), crab-grass (*Panicum sanguinale*) and some other varieties of panic-grass, pigeon-grass (*Chœtocloa viridis* and *C. glauca*), lamb's-quarters (*Chenopodium album*), and chickweed (*Alsine media*). Every one of these weeds is an annual, not living over the winter, and their seeds constitute fully three-fourths of the food of twenty species of native sparrows during the colder half of the year. Prof. F. E. L. Beal, who has carefully studied this subject in the upper Mississippi Valley, has estimated the amount of seed eaten by the tree sparrow, junco, and other sparrows that swarm down from Canada in the fall and feed in the rank growth of weeds bordering roadsides and cultivated fields. He examined the stomachs of many tree sparrows and found them entirely filled with weed seed, and concluded that each bird consumed at least a quarter of an ounce daily. Upon this basis, after making a fair allowance of the number of birds to the square mile, he calculated that in the State of Iowa alone the tree sparrows annually destroy 1,750,000 pounds, or about 875 tons, of weed seed during their winter sojourn.[1] The value of this work can best be appreciated by considering the annual loss to the farmer occasioned by the presence of weeds and the consequent reduction of cultivated crops. Mr. F. V. Coville, botanist of the Department of Agriculture, states that "since the total value of our principal field crops for the year 1893 was $1,760,489,273, an increase of only 1 percent, which might easily have been brought about through the destruction of weeds, would have meant a saving to the farmers of the nation of about $17,000,000 during that year alone."[2]

Besides tree sparrows and juncos, the most important sparrows that destroy weeds in the Mississippi Valley and on the Great Plains are the fox sparrow, the snowflake, the white-crowned sparrow, Harris's sparrow, and the different longspurs. Farther south are found the lark sparrows, and on the Pacific slope occur Nuttall's sparrow, the golden-crowned sparrow, and Townsend's sparrow. East of the Alleghenies the most active weed eaters are the tree sparrow, fox sparrow, junco, white-throated sparrow, song sparrow, field sparrow, and chipping sparrow. On one of the Maryland farms visited in 1896, tree sparrows, fox sparrows, white-throated sparrows, song sparrows, and juncos fairly swarmed during the month of December in the briers of the ditches between the cornfields. They came into the open fields to feed on weed seed, and were most active where the smartweed formed a tangle on low ground. Later in the season the place was carefully examined. In a cornfield near a ditch the smartweed formed a thicket more than 3 feet high, and the ground beneath was literally black with seeds. Examination showed that these seeds had been cracked open and the meat removed. In a rectangular space of 18 square inches were found 1,130 half seeds and only 2 whole seeds. During the ensuing season no smartweed grew where the sparrows had caused this extensive destruction. Even as late as May 13 the birds were still feeding on the seeds of these and other weeds in the fields. Sixteen sparrows were collected on that date, and 12 of these, mainly song, chipping, and field sparrows, proved to have been eating old weed seed. So thoroughly had the work been done that diligent search showed only half a dozen seeds in the field where they had been feeding. The birds had taken practically all that were not covered; in fact, the song sparrow and several others had scratched up much buried seed.

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[1] Farmers' Bull. No. 54, U. S. Dept. Agriculture, p. 28, 1897.

[2] Bull. No. 17, Div. Botany, U. S. Dept. Agriculture, p. 3, 1896.

In the greater part of the United States most of the song sparrows, and all but a very few of the dickcissels and field, chipping, vesper, lark, Harris, and grasshopper sparrows, are replaced in winter by snowflakes, juncos, longspurs, fox sparrows, white-throated sparrows, and white-crowned sparrows. All these birds have much the same food habits, but they differ in the quantity and kind of seed they eat. Thus, the tree sparrows, or 'winter chippies,' and longspurs feed largely on seeds of grasses, especially those of pigeon-grass, crab-grass, and allied species, while the white-throated sparrow in the Eastern States, Nuttall's sparrow in the Pacific coast region, the snowflake of the northern tier of States, and the white-crowned sparrow, so abundant in the central part of the United States, particularly relish amaranth and lamb's-quarters. The white-throated sparrow is also a great consumer of ragweed, and outranks in this regard every other sparrow except the junco. The song sparrow shows a liking for polygonums, and in the destruction of the weeds of this genus is the most valuable bird whose food habits have thus far been investigated.

During cold weather the native sparrows require an abundance of food for warmth, and it is habitual with them to keep their stomachs and gullets heaping full—so full, in fact, that if a bird be killed and shaken by the feet scores of seeds rattle out on the ground. This habit, coupled with their gregariousness, greatly increases their efficiency.

SUMMARY.

It is hardly to be expected that such seed eaters as sparrows should destroy as great a quantity of insect pests as birds that are entirely insectivorous. When it is found that in the food of the native sparrows such pests average but 25 percent, it is only what might be expected. Still this percentage, when compared with the percentages found in the cases of some other birds, is no mean showing. The red-winged blackbird's is less than 20 percent, the catbird's but 16 percent, the cowbird's 13 percent, and the crow blackbird's only 10 percent.

But as weed destroyers, the native sparrows are unrivaled. In a garden within two months they will sometimes destroy 90 percent of such weeds as pigeon-grass and ragweed. After they have consumed most of these seeds they turn to those of other weeds, which furnish them with a bountiful supply of food all through the winter and even well into the spring. Weed seed forms more than half of their food for the entire year, and during the colder half of the year it constitutes about four-fifths of the food of many species.

When the food of the native sparrows is divided into the three classes mentioned on page 16, the neutral part proves to be small, not exceeding a third of all that is eaten; the injurious part very small; and the beneficial part much larger than that of most birds, and from five to ten times as great as the injurious part. We may therefore safely conclude that, as a class, these small birds are well worthy of our protection.

SPARROWS IN THE FIELD.

Much individuality is shown by birds in the selection of their particular habitats. Some species, like the meadowlark and the prairie chicken, live out in the open; others, such as the catbird and the brown thrasher, prefer to dwell in close proximity to suitable shelter; and still others, like the bobwhite, are fond of the open, but nevertheless require the presence of cover at no great distance. A similar difference in habitat prevails among the several species of sparrows, which renders them more or less complementary to one another in their work.

Through the kindness of Mr. J. S. Russell, of Boston, I was enabled to make some observations during 1892 on a New England farm near the base of Mount Chocorua, one of the southern peaks of the White Mountains. These investigations were made with a view to ascertaining the character of the localities selected as nesting sites by different species and the extent of territory covered by each in securing food for itself and young; also to learn what ground was covered after the nesting period had passed. The results may be briefly summarized. A chipping sparrow was found nesting in a lilac spray over the farmhouse door and feeding in the dooryard, with an occasional foraging trip into a road leading through an adjoining pasture; a field sparrow nested in the briery lower end of this pasture; a song sparrow, in a marshy spot about 30 yards from the field sparrow's nest; a vesper sparrow, in a hayfield above the pasture, feeding there and in the pasture; and a pair each of white-throated sparrows and juncos in a moist lowland meadow just below the pasture. The last-mentioned birds appeared to come into contact with the cultivated crops of the farm less than any of the others, and seemed less naturally placed than some scores of other white-throats and juncos that nested about 1,000 feet higher up the mountain. When the nesting season was over and all the birds became more gregarious, field and chipping sparrows were observed in the pigeon-grass that had overspread the vegetable garden near the house; both of these species and vesper sparrows along the hayfield fence, with juncos just beyond the fence; and song sparrows, white-throats, and a few white-crowns in the moist meadow. The last three species later (the first week in October) entered the vegetable garden.

In a count of the individuals found within a radius of 5 miles from the farm as a center, made during the seventy-five days from July 18 to September 20, song sparrows were noted 139 times, chipping sparrows 138 times, field sparrows 113 times, vesper sparrows 73 times, white-throats 58 times, and juncos 39 times. Care was taken not to count the same individual twice in a day.

The chief interest in these observations is their comparison with much more extended and thorough studies pursued on a farm at Marshall Hall, Md., which has been frequently visited during the past five or six years. This farm, as has been mentioned, is situated upon the level, alluvial bluff of the Potomac, directly opposite Mount Vernon, Va. On the brink of the bluff stand, at intervals along several hundred yards of sandy road, a farmhouse, a horse barn, a cow barn, and a negro cabin. Mowing land, pasture lots, and fields where corn, wheat, and tobacco are grown, extend back from the river for a third of a mile. Out in the arable land is a storage barn. Between this barn and the river runs a bushy ditch that courses almost parallel to the river for the greater part of its length and then turns to empty into it by means of a swampy timbered outlet beyond the negro cabin.

On these two farms, so different in feature—one beside a Southern river, the other on a slope of a New England mountain—the same characteristics are found to mark the habitats of the various sparrows. In summer, song sparrows live in the swampy outlet of the ditch, all along the beach of the river, and in a wet blind gully cut into the bluff just above the farmhouse, but frequently leave their almost aquatic habitat and ascend to the top of the locust-fringed bluff in order to forage in the road and about the buildings for kinds of food not plentiful along the river shore. Chipping sparrows breed about all the buildings of the farm, but have never been observed on the beach or in the swampy indentations of the shore line. Several nest in a pear orchard hundreds of yards distant from any waterway. Field sparrows rear their young upon poor, worn-out land of the farm, usually amid the broom sedge and briers of the upland, and at no great distance from cover. Some dwell along the draining ditch previously referred to. The favorite resort, however, seems to be a small clay knoll overrun with dewberries and hemmed in by trees on a part of the bluff 200 yards from the nearest buildings. At the edge of the bluff they are sometimes mingled with song sparrows that come up from the beach. Chipping sparrows are never found with them at this point. Several pairs of grasshopper sparrows have their homes in the hayfield, which extends back from the bluff, and one or two pairs build in an adjoining briery old cornfield. All of them prefer dry, grassy fields devoid of the cover which many other birds find essential. No song or chipping sparrows enter very far into the timothy, and field sparrows that occasionally venture in a little way keep near the ditch. English sparrows breed in the gutters of the house, in an abandoned dovecote, and in holes of trees standing in the dooryard. They feed wherever grain is obtainable.

This rough description of the habitats of the several kinds of sparrows will make clearer a more detailed consideration of the summer food habits.

Song sparrows during the breeding season run along the sandy and pebbly beach of the Potomac and investigate the aquatic vegetation cast up by the water and the logs and other débris left by the tide. Here they secure certain kinds of ground-beetles which live at the water's edge, running spiders of such species as are plentiful on the beach, aquatic snails, dragon-flies, and May-flies, as well as their favorite food, the seeds of the various polygonums, which generally grow in moist places. In the gully above the farmhouse they obtain blackberries, wild cherries, and mulberries. So far as my rather limited observations go, this fruit is picked up from the ground—a method that if habitual justifies a higher economic rating of song sparrows; for during berry time about 10 percent of the food of song sparrows is furnished by cultivated patches of blackberries and raspberries, and if the fruit thus destroyed is entirely or chiefly that lying on the ground little damage is done to the crop.

The song sparrows which breed in the catbriers of the gully beside the house and the honeysuckle-draped shrubbery of the almost perpendicular face of the bluff in front of the house make frequent journeys to the dooryard and vegetable garden. One pair of song sparrows built in a bush in the center of the garden, and were constantly seen in company with chipping sparrows, hopping about on the ground among the beans and cabbages. Song sparrows fed also along the road on the brink of the bluff. In the weedy growth of the roadside which was a few inches high and consisted of cropped grass, a little clover, and many such weeds as chickweed, knotweed, lamb's-quarters, oxalis, sheep sorrel and rib-grass, they picked up weevils and other beetles, and caterpillars, besides some of the lamb's-quarters and knotweed, and in the adjoining field they found the seeds of pigeon-grass, crab-grass, and paspalum. It was a common sight during early summer to see them hunting along the two rows of knotweed in the road, and every now and then scratching in the sand for seeds, which they speedily devoured with apparent relish. One day, after a storm, I noticed a song sparrow searching and picking amid the black débris of vegetable matter left in the road by the water. I examined the débris and found in it several seeds of last season's lamb's-quarters.

Chipping sparrows hunt industriously through the same roadside vegetation, and some that were collected were found to have eaten weevils, grasshoppers, leaf-beetles, knotweed, oxalis, and chickweed. One bird that I watched with a telescope picked off some of the hundreds of midges resting upon a knotweed plant, and subsequently plucked caterpillars, leaf-hoppers, and ants from other plants.

Chipping sparrows, unlike song sparrows, are given to foraging out in plowed fields—a habit which increases their usefulness on the farm. Four of these birds were collected on May 29 (1896) from the middle of a field newly plowed for tobacco. They had eaten largely of timothy seeds, and less freely of weevils, click-beetles, and two kinds of leaf-beetles (*Odontota dorsalis* and *Chætocnema denticulata*). Two years later this field was in hay, and although grasshopper sparrows bred in the high standing grass, chipping sparrows were not seen there until the crop was harvested, when they spent much time hunting in the stubble. On one August day three chipping sparrows were noticed well out in the stubble, darting up into the air and catching winged ants (*Solenopsis molesta*), which floated over the field by millions. These insects have stings, spines, and formic acid, three of the devices supposed to repel birds; yet the three chipping sparrows secured 21 ants in 20 minutes, and several English sparrows and a score of bank swallows were also observed greedily devouring them. Some song sparrows came up from the beach and ran a little way into the hay stubble; and although they were not actually seen feeding on the ants, it seems probable that they also availed themselves of this abundant and easily accessible food supply.

In the pear orchard a score of chipping sparrows were observed during the last week of August (1898) destroying the seeds of an abundant growth of crab-grass that was choking the truck crops among the pear trees. They were also eating the seeds of climbing bindweed, spotted spurge, purslane, and oxalis. The exact method of procuring the crab-grass seeds, still in the milk, was as follows: The birds hopped up to fruiting stalks and, beginning at the tip of one of the spikes, bit and chewed the seeds, gradually moving their beaks along to the base. On finishing one spike they immediately commenced upon another. Usually they did not remove their beaks until the base was reached, though some, especially birds of the year, would seize a spike by the middle, munch the seeds a few seconds, and then pass to the next. Pigeon-grass was treated in like manner. The seeds of these two grasses are more commonly eaten by sparrows later in the season after they have dropped to the ground.

Twenty or thirty chipping sparrows were observed on June 16 (1898) about a field of ripening wheat that lay back from the river. Some of them had doubtless bred near the field, but some had come from the buildings along the river front. They often flew out into the wheat—100 yards from the fence—to a luxuriant growth of ragweed, and destroyed many beetles (*Systena blanda*), pests that proved very injurious during the next season. Several field sparrows were also noted, but these did not accompany the chipping sparrows into the wheat field, but stayed chiefly among the weeds and briers of an adjoining old cornfield.

Field sparrows showed no striking differences from chipping sparrows in diet, for, although the nesting sites of the two species were quite distinct, the feeding ranges constantly overlapped. One pair with recently fledged young, however, occupied a weedy old tobacco seed-bed among the woods, hundreds of yards from the nearest point at which chipping sparrows occurred. Here the old birds were eating crab-grass and feeding their young on caterpillars and grasshoppers.

On one day early in September a flock of 15 field sparrows was observed moving from point to point beside an osage-orange hedge that extended back from the river several hundred yards. The birds were feeding on crab-grass that grew along the hedge, but every now and then one would spring up into the air and seize a braconid (*Melanobracon*), numbers of which continually flew about amid the herbage of the field. Braconids, often erroneously called ichneumon flies, are of much value earlier in the season owing to their attacks on caterpillars.

Field and chipping sparrows sometimes feed together near water courses. In such case I always found song sparrows feeding with them. During August (1898) the three species were frequently together in a tobacco field beside the negro cabin. This field was so infested with tobacco worms that the crop for that year had already sustained a loss of 50 percent; but none of the sparrows appeared to molest the worms, which perhaps were larger than they could conveniently handle, but fed chiefly on such insects as subsist on the weeds of the tobacco field. As these insects at times forsake the weeds and attack crops, their destruction is of more benefit than injury. Field sparrows were found feeding in the cornfields from the time the corn tasseled until it was harvested. They were also partial to briery old cornfields, where they were often associated with grasshopper sparrows. Chipping sparrows fed in cornfields, old or growing, only when they were near buildings, and song sparrows never entered them except in the vicinity of a water course.

Grasshopper sparrows, the most insectivorous of all eastern sparrows, are birds of the open fields, just as many of the other species are birds of the hedgerows. One or two pairs chose for their breeding grounds one of the old cornfields just mentioned and raised their families amid the brier tangles that claimed the field. No notes were made of the feeding habits of these. Several pairs, however, that nested in the adjoining hayfield were carefully studied. Among the different insects fed to their young were grasshoppers of the genera *Hippiscus*, *Dissosteira*, *Melanoplus*, *Scudderia*, and *Xiphidium;* cutworms, army worms, and various related larvæ; such bugs as *Alydus pilosulus* and *Hymenarcys nervosa;* and various spiders, including *Oxyopes salticus.* The parent birds ate spiders and grasshoppers of the same kinds, with beetles of the genera *Systena*, *Sitones*, and *Atœnius*, and such bugs as *Alydus*, *Corizus*, and *Trichopepla semivittata.*

The record of the English sparrows at the Marshall Hall farm shows nothing to their credit. They have reduced the wrens in number, completely crowded out the bluebirds, and have stolen many of the nesting burrows in the exposed face of the bluff properly belonging to the bank swallows that daily come to the farm to circle over the fields for insects. Their slight value as insect destroyers could very profitably be dispensed with if the services of the indigenous species which they have driven away could be restored. Their number seems to vary from 30 to 200. Each night they roost with the chickens among some cedar trees by the house, and in the daytime usually feed with the chickens and hogs or glean grain around the various buildings of the farm, particularly the corncrib. Such food as they secure in the field is usually grain, but very rarely weed seed. They damage the ripening oat and wheat crops, partly by pilfering the grain, but more by breaking down the stalks, and join the crows in their attacks on corn in the milk, though in this case they are able to do but little harm. Their habits contrast strikingly with those of the several native species frequenting the farm.

The summer observations on the two farms, especially on that at Marshall Hall, give interesting and suggestive data concerning the relation of the native sparrows to agriculture. They show that the nesting habitats of the different species are so distinct and varied as to be complementary to one another. Chipping sparrows nest around the buildings, field sparrows in worn-out fields and briery pastures, vesper and grasshopper sparrows in level hayfields, and song sparrows in gullies and moist meadows and along waterways, while juncos and white-throats have their nesting places in the high, lonely mountain clearings of the north. The ranges of the various species become less distinct after breeding time is over; but, though they blend and overlap, each species seems to continue its own peculiar work. During this period chipping sparrows cover a wide range—garden, orchard, roadside, and far out in ploughed land and stubble-fields; song sparrows frequent gully, thicket, bluff, and river shore, and make forays into garden and field; field sparrows are found in waste land and cornfield, and at times in garden and hayfield, and vesper and grasshopper sparrows far afield in the midst of grass and other crops. Each renders important service, and all together, by supplementing one another, are of very great value to the farmer.

In their regular feeding habits sparrows and other birds are constantly engaged in keeping the flood of insect life within bounds, each, as here shown, having its own separate field of work; but when, as sometimes happens, any particular kind of insect overflows its usual limits and threatens to disturb the normal distribution, all the birds often seem to abandon temporarily their accustomed fields and unite in overcoming the invasion. Two instances of this kind came under observation on the Marshall Hall farm. In 1895 the locust leaf-mining beetles (*Odontota dorsalis*) became overabundant and turned the beautiful green of the locusts fringing the bluff into an unsightly brown. All the birds, including the sparrows, ate these beetles freely and constantly, and largely aided, by their united attack, in reducing the beetles in number to such an extent that they have not appeared subsequently in sufficient force to repeat the damage. Again, during May, 1899, the May-flies, which emerged from the river, became a plague, alighting upon the farm buildings and literally covering them, frightening the horses, annoying the workmen, and infesting the farmhouse in such swarms that it was well-nigh uninhabitable. Practically all the birds of the farm fed on them, and in a large measure reared their young upon them, and by this means reduced them to their normal level. May-flies do not ordinarily become obnoxiously abundant, but when they do even their function in furnishing subsistence to valuable food fishes does not save them from being ranked as pests, the destruction of which is beneficial.

In order to study the feeding habits of sparrows during cool weather, the Marshall Hall farm was visited in the middle of November, 1899, when heavy frosts whitened the ground every morning. The chipping sparrows and grasshopper sparrows had left for warmer latitudes, but in their places were throngs of tree sparrows, white-throated sparrows, juncos, and fox sparrows, which had come down from the north. A few savanna sparrows were also noted. Field sparrows were present in fully as large numbers as they had been during the breeding season, while song sparrows appeared even more abundant. The sparrow family, as a whole, was several times more numerous than it had been during the summer.

The several species were extremely shy, and nearly all kept very close to cover, in marked contrast with their comparative indifference during the breeding season. Hedgerows or other shelter seemed usually essential to their presence, and but for the bushy ditch and osage-orange hedge it is doubtful if most of the species would have been found at all in the largest fields of the farm. The juncos and field sparrows showed somewhat less of this dependence, the latter being sometimes observed feeding 50 to 75 yards from cover; and the few savanna sparrows observed, as is usual with that species, ranged freely over the broadest fields. The reason for the rule of keeping close to shrubbery of some kind became evident one morning, when a flock of 30 sparrows that was feeding a few paces from the cover of the brink of the bluff suddenly rose and scurried to the bushes just in time to escape a sharp-shinned hawk, which had noiselessly swooped down on them. They were so often menaced by this enemy and the closely allied Cooper's hawk that they did not dare to seek their food far from protecting vegetation.

The different species of sparrows appeared to mix indiscriminately, but close inspection disclosed flocks within flocks. The song sparrows and white-throated sparrows mingled freely, but the juncos and the fox sparrows, and to a lesser degree the field and tree sparrows, were generally grouped separately. These flocks, however, often fed in company with the other kinds.

The ranges of the different species on the farm were, therefore, not so distinct as they were in the case of breeding birds; but certain preferences in the selection of feeding grounds were shown by the various species. A score of field sparrows with decidedly clannish instincts were always to be found upon the high clay knoll which had formed a nesting site for this species, and there was a smaller flock along the ditch in which field sparrows had also bred during the summer. Tree sparrows habitually resorted to this same ditch at a point somewhat nearer its outlet. The land occupied by these two species was poor and supported a rank growth of broom sedge. White-throated sparrows and song sparrows, although found to some extent along the ditch, usually frequented the tangled underbrush of the narrow strip of trees fringing the bluff. Juncos often associated with these two species, and at times flew over and fed in company with one or the other of the two flocks of field sparrows. They exhibited a peculiar habit of using a big cedar tree in the middle of an old cornfield, just as the other sparrows resorted to a hedgerow for protection. Vesper sparrows were observed destroying many weed seeds in the open fields.

Thus field sparrows occupied their summer quarters, and tree sparrows chose similar locations, and showed a resemblance to field sparrows in their liking for broom-sedge fields; song sparrows inhabited much the same places as in summer; juncos habitually fed far afield, while, strange to say, white-throated sparrows, the summer associates of the juncos in the New England mountain clearings, were found in a different habitat and in company with another species, the song sparrows.

Some interesting notes on the feeding habits of sparrows were obtained through these autumnal visits. Out in a cornfield, farther from cover than many of the birds would venture, a flock of juncos was found picking from the ground the fallen seeds of the pigeon-grass which had overspread the field. Beside the road along the bluff, where there was a fringe of Virginia wild rye (*Elymus virginicus*) and tall redtop (*Sieglingia sesleroides*), juncos were also observed eating the seeds of these grasses in company with white-throated and song sparrows. They picked up most of the seeds from the ground, but took a few from the stalk. Where the seeds were covered by fallen leaves they scratched the leaves away, unlike crows, which use their large beaks in such cases. The same three species were grouped together in a wheat-stubble field which had grown up to ragweed, where they were securing the ragweed akenes that had dropped to the ground. These birds were watched with a powerful field glass and were seen to crack the akenes, drop the dry shells, and swallow the meaty part, a process that clearly precluded any subsequent germination. On the bare knoll already mentioned was a growth of red-sheathed rush grass (*Sporobolus vaginæflorus*) and poverty grass (*Aristida*), and here field and tree sparrows were scattered about the ground feeding on the fallen seeds of these grasses.

One or two of the fields were overgrown with broom sedge, the seed-buoying plumes of which, when lighted up by the low sun, gave a frost-like brilliancy to the reddish straw-colored mass beneath. Field sparrows and tree sparrows were also found here, and as they swayed on the tops of the stalks, taking seed after seed, they would disengage the light plumes, which would float away empty. Sometimes the birds on alighting on the plants would bend them to the ground and would hold them down with their feet as they picked out the seeds, but not often would they otherwise feed from the ground.

Out in the middles of the fields of a dozen acres or more a few savanna sparrows were observed, which, with ten or twelve quail and fifty or sixty meadowlarks, were busily reducing the weed harvest. Vesper sparrows were sometimes associated with them and seemed equally independent of shelter. Apart from these there were few that fed far from cover, the juncos in the cornfield and the field and tree sparrows in the broom-sedge growth, which sometimes were found 50 to 75 yards afield, forming practically the only exceptions.

The white-throated, fox, and song sparrows undoubtedly fed on wild fruits, but it was very difficult to observe them in the act. A flock composed of these species was observed in a tangle of vines that grew along the bluff. Several white-throated sparrows were noted ascending high up into a butternut tree entwined with woodbine and wild grape and feeding in company with a flock of cedar birds on the fruits of these two vines. Another white-throat was seen to eat a pokeberry, and a song sparrow a berry from a woodbine which hung so low as almost to touch the ground. That several species of sparrows feed on berry seeds has been shown by stomach examination, and this habit may account in a measure for the birds' spending much of the time among such tangled thickets of fruiting plants.

A heavy fall of snow on February 17, 1900, made possible the study of the feeding habits of sparrows under typical winter conditions. Unfortunately it was not feasible to visit the farm on which observations had thus far been made, but a neighboring farm on the same bluff afforded ample opportunity for investigations. Here much of the land is given up to market gardens and orchards, with a consequent superfluity of weeds, which, with the admirable cover afforded by two slightly timbered bushy brooks that converge to enter the river in a swampy outlet, furnishes a good locality for sparrows.

Between the two brooks, in a potato field grown up to ragweed, amaranth, and lamb's-quarters, a score of tree sparrows, song sparrows, and juncos were busily feeding. Most of the ragweed akenes lay buried under a foot of snow, very few clinging to the stalks. An abundance of the seeds of lamb's-quarters and amaranth was, however, available. The birds seemed to prefer the ragweed, but they also ate large quantities of the others. While some fed from the tips of sprays, others hopped about on the snow and picked from the lower branches. So thick were bird tracks in the snow in one part of the field that in a space 50 yards square it would have been difficult to find many places a square yard in extent that were untracked by the tiny feet. Mouse tracks were also noticed, but these were so few that the extensive destruction of seeds shown by the amount of chaffy débris on the snow was evidently due almost entirely to the sparrows.

The tree sparrows were the most habitual stalk feeders. They pitched down here and there in flocks to feed on the seeds of the straw-colored broom sedge (*Andropogon virginicus*), and then would journey on, sometimes half a mile, till they came to another patch of the same grass. They often picked from every stalk before passing on to other feeding grounds. Frequently two birds would be seen feeding from a single stalk, while a third would be hopping in the snow below searching for seeds shaken down or accidently dropped. The snow was blowing in clouds across the fields and these northern birds seemed more at home in their wintry surroundings than any of the other sparrows. This adaptability to snowy conditions makes them extremely useful in supplementing the work of other birds which are not habitually stalk feeders, and which, therefore, must be less efficient weed-seed consumers when the ground is covered with snow.

It was expected that the snow would force all the sparrows to stalk feeding, but such was not the case. Most of them fed, in company with cardinals, doves, and meadowlarks on the bare bluff, which was swept clear of snow by a gale that blew across the Potomac at a rate of from 20 to 40 miles an hour, and where their feeding ground was a closely cropped pasture of Bermuda grass with comparatively few seeds. Here they gathered such sustenance as they could secure, keeping their heads to the blast and looking like so many trout heading upstream. They apparently preferred to battle with these adverse conditions rather than feed from weed stalks, which offered plenty of food in sheltered situations. They seemed to have no regard for cover. Out in the pasture they hopped about ravenously eating seed after seed, hunger having apparently driven away all fear. More than 200 were thus engaged, chiefly juncos and tree sparrows, but with song sparrows, white-throats, and field sparrows also present. They covered the pasture completely, and by consuming an enormous quantity of the seeds of the Bermuda grass, or wire-grass as it is locally known, prevented in a measure the blowing of the seeds to truck land, where this grass is the worst weed of the farm and entails an annual expense of $200 to the owner.

During the two following days the wind, together with some melting, caused bare spots to appear in the snow on the truck land and orchards beyond the pasture. The sparrows straightway left the wire-grass for the crab-grass, ragweed, and lamb's-quarters that abounded in the truck land and orchards. Ground feeding proved to be the habitual method, although the white-throats and a song sparrow were seen feeding on ragweed stalks, and a junco and a tree sparrow on those of lamb's-quarters. Most of the sparrows fed on crab-grass wherever it was exposed, and they flocked so thickly in it that one might have collected several with a single discharge of a shotgun. A flock of 100 goldfinches fed with the sparrows. The service rendered by the 300 birds was doubtless of considerable value; when a large number of birds thus work together within a limited area the good is evident.

In addition to the main body of sparrows, there were certain more or less isolated little troops of individuals about various parts of the farm. On some poor land back from the river there were about 20 field sparrows that fed from the exposed culms of broom sedge. During the snowy weather no sparrows except tree sparrows were seen with them, but afterwards they were joined by juncos and song sparrows. Song sparrows, during the coldest and most blustering days, were seen scatteringly all along the sandy beach of the Potomac between the ice sludge and the foot of the river bluff, but almost entirely deserted the bushy brooks and fence rows, where the snow was from 2 to 3 feet deep. Many repaired to grain barns, where they obtained weed seeds, feeding, like the birds in the Bermuda-grass pasture, in the worst wind-swept places and with their heads to the blast. Juncos occasionally associated with these song sparrows and often took refuge with them in the barns. Several song sparrows were found foraging with a flock of 50 English sparrows in the cow yard of the stock barn and about the hog pen. One of these and all the English sparrows went into various parts of the barn in search of grain.

It will thus be seen that snowy conditions alter somewhat the usual characteristics of sparrows' food habits. The native sparrows traveled farther afield and consumed the less palatable weed seed, which would not ordinarily be eaten in quantity, and even the English sparrows were once observed feeding on weed seed out in the open.

A series of observations was made in a most favorable locality in the District of Columbia from the last of November, 1899, to the end of February, 1900. The topography of the place was studied, and notes were made of the exact distribution of the sparrows found there, the actual amounts of the various kinds of weed seed destroyed, and details relating to the dissemination of seeds by the birds. The place comprises about 10 acres, traversed by a shrubby brook and almost surrounded by deciduous trees. On one side of the brook the land slopes very gently upward from the water, while on the other there is a steep bank of varying degrees of declivity. Where the slope is steepest, so abrupt in fact that cultivation has proved impracticable, as is attested by a grove of venerable beeches, an almost perpendicular curving bank marks an old course of the brook when it swung some 50 yards from its present channel. On the other side, a little farther down, a bowing curve marks another part of the abandoned channel. The bank here is abrupt on the side worn by the stream and on the other slopes gently downward to a cultivated field beyond, the level of which has been lowered by the washing away of the soil by rains. On the brink of the bank is a row of cedar trees. At the time of the investigation the land between the two beds of the stream as well as that beyond the bank had been in corn. The vegetation of the brook, its two abandoned curves, and a briery tributary near the upstream end of the tract formed the cover and to a considerable extent the feeding grounds of from 100 to 200 native sparrows. The food supply of this cover consisted of giant ragweed, spreading panicum, and climbing false buckwheat. The last was most abundant along the brook, where it climbed over the briers and shrubs, even ascending and festooning some of the trees. The giant ragweed, higher than a man's head, formed a forest of stalks between the brook and the old channel on the steep side, and was common at the mouth of the tributary. Spreading panicum grew on the concave declivitous faces of the banks and in the tributary. It was less abundant at the mouth of the tributary where it was mixed with the giant ragweed. The other feeding grounds comprised the weedy land between the former and present channels, to a slight extent the gentle slope which, except along the stream, had only a scanty growth of weeds, and finally and of great importance, the steep slope on which wheat had been grown and which bristled with ragweed, and a vegetable garden on more level ground above, where was a luxuriant crop of crab-grass, pigeon-grass, and amaranth. These several situations naturally formed almost ideal resorts for the native sparrows.

The individuality of the habits of each of the several species, though not so marked as on the Marshall Hall farm, was nevertheless sufficiently pronounced to merit passing consideration. Tree sparrows were usually too few and too shy for observation, and, with one exception, field sparrows were found only in little groups of not more than half a dozen individuals. The lack of these two species may be correlated with the absence of worn-out land and the broom sedge with which they appear to be so intimately associated at Marshall Hall.

The song sparrows and white-throated sparrows taken together aggregated 50 or 100. Sometimes one species was the more abundant and sometimes the other. They seemed to associate together constantly, as on the Marshall Hall farm. This was especially noticeable when they were feeding along the brook on the seeds of climbing false buckwheat, of which they are much more fond than are other sparrows. As has already been shown, white-throated sparrows destroy much ragweed, while song sparrows are very partial to grass seed. Hence it would frequently occur that on leaving the false buckwheat and ascending the hill the white-throated sparrows took to the ragweed on the slope while the song sparrows would feed on the crab-grass and pigeon-grass in the garden beyond.

The fox sparrow, unlike these two species, resembled the cardinal in its habit of staying close to cover and not feeding any distance afield.

The junco, on the contrary, surpassed all the other sparrows in feeding in the open. Even though its food, as revealed by the examination of stomachs, shows a comparatively large percentage of grass seed, which is usually indicative of less effectiveness as a weed destroyer, yet because of its habit of feeding afield, it is far more valuable than many of the cover-loving species which take less grass seed. Not only did the juncos feed out in the open themselves, but they encouraged other species to follow them into the middles of the ragweed field and vegetable garden, and even quite a distance out into a piece of exposed corn stubble which supported only pigeon-grass and crab-grass. They used cedar trees for cover, as at Marshall Hall, and did not seem dependent on bushes, like other sparrows. Often the flock, numbering over 100 individuals, on being alarmed would fly to an open beech wood and ascend to the tops of the tallest trees, whence they would fly several hundred yards to some open field. Song sparrows under similar conditions never leave their bushy covers to ascend to the tops of trees.

The weed seed destruction appeared much more effective than at Marshall Hall, because the feeding ranges of the birds practically included the whole of each of the several fields; even those birds usually most restricted to cover were often found in the centers of fields. The reason for this more fortunate condition seemed twofold.

In the first place, they seemed to be comparatively free from the attacks of hawks, and in the second, each of the several fields was small, containing but two or three acres, and all together amounting in acreage to hardly a single field of the Marshall Hall farm, hence the birds were never far from protecting cover.

The ground-feeding habit of sparrows was sometimes brought into sharp contrast with the feeding methods of other birds. Thus on December 10 (1899) throughout the dense ragweed of the steep slope, there were about a hundred white-throated and song sparrows busily picking up the fallen akenes, while a dozen purple finches and 2 chickadees were plucking seeds from the stalks. Again on February 3 (1900) in this same field about 50 juncos, a dozen song sparrows, and several field sparrows were feeding entirely from the ground, while a score of goldfinches hung from the tops of the ragweed, feeding entirely from the stalks. Along the tributary of the brook several purple finches were perched on the climbing false buckwheat vines feeding on the seeds still on the vines, while tree sparrows, juncos, field sparrows, white-throated sparrows, song sparrows, and fox sparrows hopped about on the ground below them, searching for seeds that had fallen. Between this tributary and the woods, on ground weedy with crab-grass and partly covered by fallen leaves, a flock of about 150 sparrows, including all the above species save the fox sparrow, were busily feeding on the scattered seeds. The song sparrow, white-throats, and juncos scratched so busily among the fallen leaves that they kept up a continuous dry crackling sound, audible for 50 yards. The differences noted on these two dates were commonly met with throughout the winter, affording abundant evidence of the manner in which the ground-feeding sparrows supplement the work of stalk-feeding species.

But although ground feeding is the rule with sparrows, it is not, as has already been shown, an invariable one. A notable exception was the stalk feeding of field and tree sparrows in the broom sedge of the Marshall Hall farm, which has been mentioned. To some extent the same species showed the same characteristics on the farm under consideration. Field sparrows were observed in several instances feeding entirely from the culms of the spreading panicum. The several other species of sparrows, except tree sparrows, which fed on this grass, did not appear to be able to secure the seeds in this way, but waited until they had been shaken out one or two at a time from the inclosing sheaths. Song sparrows, juncos, and white-throated sparrows were occasionally observed taking seeds from the stalks of other plants. In four instances juncos were seen in the tops of tall amaranth plants picking out a few seeds. A song sparrow was also noted feeding from amaranth stalks, and others were noted feeding from the stalks of ragweed, dock, and lamb's-quarters. A white-throated sparrow in a single instance was observed plucking a seed from a false buckwheat vine. But these were isolated instances, rare exceptions to the general rule of ground feeding.

It should be stated, however, that there was snow on the ground during only one of the visits, and then it was barely an inch deep, while there was a big bare place along the tributary where sparrows spent much of their time feeding on crab-grass and pigeon-grass. Had the snow been a foot in depth all of this food supply and much of the ragweed would have been rendered unavailable, in which case it seems probable that the birds would, for a time at least, have been obliged to take ragweed akenes from the plants, and perhaps, like the snowflake (see p. 53), to resort to the seeds of amaranth and lamb's-quarters, which appeared to be less palatable to them.

The snow afforded very useful records of the actions of the sparrows. A few footprints far out in the middle of the ragweed field and many in the weedy garden above showed where the birds had been feeding. In many places much chaffy débris gave additional evidence. It appeared more frequently under plants of lamb's-quarters than under those of the more abundant amaranth, showing the birds' preference for the former species; and in most instances bending plants just grazing the ground had been resorted to, while sometimes the birds had apparently been feeding from the stalks. Similar débris, consisting of parts of flowers and broken shells of akenes, were found under many ragweed plants. It might be supposed that weed seed destruction by mice would be of more value than that by sparrows, but the records left in the snow did not justify any such conclusion. Not only were mice tracks extremely few compared with those of the birds, but no evidence appeared of the eating of weed seeds by the few mice that had been in the fields. One track that I carefully inspected passed directly through the ragweed in the wheat stubble, but nowhere could I find any indications that the mouse had eaten seeds of any kind.

Some notes were made of the destruction of ragweed akenes. In the snow beneath a ragweed 3½ feet high a song sparrow was feeding. Subsequent examination showed about 50 imprints of its feet, 3 whole akenes, and the broken pieces of the shells of about 20 more, together with some of the débris of floral parts. On another day a hundred juncos, white-throats, and song sparrows had been feeding busily for half an hour in a patch of ragweed, and a few minutes' careful inspection of the ground disclosed only 6 whole akenes among a hundred empty half akenes. At another time a dozen fox sparrows were busily scratching on the ground under a patch of giant ragweed and picking up the large akenes. Here I found a large number of empty entire akenes, at the smaller end of each of which was a rent through which the meaty seed had probably been squeezed by pressure from the birds' beaks. This method of manipulation seems to account for the fact that giant ragweed seeds are rarely met with in sparrows' stomachs in a condition allowing identification.

The grain of spreading panicum, being inclosed in sheaths, rattles out on the ground a little at a time throughout the winter, and thus affords several species of sparrows a constant supply of food. Under some of these plants where a song sparrow had been hopping about were found 12 grains, 6 of which proved to be empty, and under others where a junco had been picking from the ground 5 out of 6 grains found were empty. Sparrows appear to make a practice of removing the outer glumes of these grains before swallowing them, while those of the closely related crab-grass they seldom, if ever, remove.

Climbing false buckwheat rains down multitudes of its seeds, which furnish an abundant and accessible supply of food. In one sandy place thick with birds' tracks 52 of the seeds were found within a radius of 2 feet, and all but 5 were empty. Seeds of this plant are shiny black and look like miniature beechnuts. In some cases one of the three sides of the seed had been cut away, while in a much greater number one of the three edges had been slit so as to leave the empty seed shell entire and apparently uninjured.

Part of the investigation on this farm was directed to the question of the dissemination of weed seeds by sparrows. One hundred and fifty bird droppings were collected on each side of the brook, in the ragweed field and in the weedy garden above. Examination of these revealed but 7 uninjured seeds, one of crab-grass and 6 of amaranth, certainly a very insignificant proportion of the number consumed. And it is not unlikely that many of those thus voided uninjured are afterwards taken a second time. Most of the dung consisted of the pulverized remains of seeds, among which the most conspicuous were small fragments of the akenes of ragweed. The finely comminuted fragments of grass seeds were also very abundant. Among these crab-grass occurred often, but the remains of pigeon-grass and spreading panicum were positively identified in only a few instances, probably because these two seeds are usually hulled before they are swallowed (see p. 49). Amaranth and lamb's-quarters were easily recognized by the characteristic texture of the coats of their seeds, and in one instance by the empty half shells of the seed. Bits of the shiny seeds of climbing false buckwheat frequently appeared in the dung. The seeds of sedge and oxalis were comparatively rare.

Winter observations on the District of Columbia farm brought out several points which it is to be hoped may prove to be general. Under favorable conditions the entire farm was worked over thoroughly, even at a season when birds require more or less accessible cover for protection. The sparrows took their food chiefly from the ground, in contrast to other species, which they thus supplement. They appeared to have manipulated a large portion of the seeds left among their pickings in such a way as to prevent germination, and the examination of their droppings furnished good evidence that they do not, as a rule, disperse weeds by such means.

The feeding habits of several abundant and important species of sparrows that have not come under direct observation may be briefly considered in comparison with those of the species found on the three farms visited. The lark sparrow and dickcissel resemble the grasshopper sparrow and vesper sparrow both in their large consumption of insect pests and in the fact that their feeding ranges comprise open areas of cultivated land. The dickcissel, more than the lark sparrow, is a bird of the vast open, treeless tracts, and in the fertile agricultural districts of this character in the central part of the United States appears to be more valuable, both as an insect consumer and as a weed destroyer, than species that stay close to cover. Prof. F. E. L. Beal has observed a flock of snowflakes picking the akenes from ragweed plants at a time when the ground was covered with snow. He also has seen them standing in the snow and stretching on tiptoe for the seeds in spikes of pigeon-grass. The Lapland longspur sometimes feeds out in ploughed land in company with shore larks. It feeds mainly from the ground, rarely, if ever, from the stalk, as the snowflake often does. The wide-ranging habits of all these birds increase their value and make them at least the equals in effectiveness of other sparrows that destroy a greater percentage of weed seed but are curtailed in their usefulness by the fact that their feeding ranges are limited to the immediate vicinity of protecting bushes.

SPARROWS IN CAPTIVITY.

During the spring of 1898 a series of feeding experiments was carried out with a song sparrow, a junco, and a white-throated sparrow. The birds were kept supplied with canary seed and offered different kinds of insects in order to ascertain their likes and dislikes and, if possible, correlate the results with those derived from the examination of the contents of stomachs. May-beetles (*Chalepus*) were frequently offered, but were refused in every case save one. In this exceptional instance the sparrows were very hungry, and the song sparrow attacked the hard-shelled insect and after pecking at it for ten minutes succeeded in breaking it open so that the soft parts could be easily obtained. Then all three sparrows fought for a share of these tidbits. The difficulty of manipulating May-beetles, which form an important part of the insect food of such large birds as blackbirds and crows, seems to explain their absence from the contents of the thousands of sparrow stomachs examined in these investigations.

A number of the experiments were designed to test the efficacy of protective coloration of insects against the attacks of birds. Several admirably protected grasshoppers (*Eucoptolophus sordidus*), which were found with the greatest difficulty on fallen oak leaves, were replaced on oak leaves, with which they blended perfectly, and offered to the birds. All three sparrows immediately pounced upon the grasshoppers and greedily devoured them. A dozen experiments were tried with the song sparrow to test the efficacy of the protective coloration of weevils. A weevil (*Sitones hispidulus*) sunk almost beneath sand of its own color was always instantly spied out. The results of these experiments, together with the fact that protectively colored weevils and grasshoppers form an important part of the contents of stomachs examined, indicates that sparrows are not baffled by such devices.

Protection by means of the ejection of an offensive fluid seems to be more effective. Blister-beetles (*Epicauta*), which possess an irritating secretion, were repeatedly refused by the three sparrows. Disagreeable secretions when coupled with showy or warning coloration were found, in a number of cases, to repel the attacks of the sparrows. A gaudy orange and black harlequin cabbage bug (*Murgantia histrionica*) was offered to the birds. The junco and song sparrow refused it, but the white-throated sparrow seized it and after some preliminary pecking ate it piecemeal. Two other injurious insects, the three-lined flea beetle (*Lema trilineata*) and the twelve-spotted cucumber beetle (*Diabrotica 12-punctata*), which are warningly colored beetles with pungent secretions, were placed in the cage, but the sparrows, though exceedingly hungry, refused them. The failure of the birds to destroy these pests is in part offset by the fact that they do not prey on the useful ladybird beetles of the family Coccinellidæ, which are also both warningly colored and ill flavored. Two species of these insects (*Adalia bipunctata* and *Hippodamia maculata*) were offered to the birds a dozen times, but were always allowed to crawl out of the cage unmolested. The results of these experiments coincided with the data accruing from the examination of the contents of stomachs in the laboratory.

The frequency with which the smaller and less useful forms of ground-beetles (Carabidæ) are met with in examination of sparrow stomachs suggested the carrying out of some experiments with these insects. Carabidæ emit volatile irritating fluids which would naturally be expected to render them immune from the attacks of birds. Just how effective this protective device actually is will appear from the account of these experiments.

Two specimens of *Amara impuncticollis*, a carabid about one-third of an inch long, were placed in the cage wherein were the three sparrows. The white-throated sparrow instantly seized one of these beetles and the song sparrow the other, while the junco was obliged to content itself with pieces dropped by its mates as they hurriedly ate the tidbits. Before any further test could be made the junco and white-throated sparrows were, unfortunately, accidentally killed; the series of experiments was continued, however, with the song sparrow. This same species and two others, *Anisodactylus rusticus* and *Pterostichus sayi*, each about a half inch in length, were repeatedly offered to the song sparrow and eaten with avidity. These three species, though possessing the pungent secretion, are not so offensive as many others, hence the strength of the dose was increased, and two carabids of disgusting odor, and about equal in size, *Nebria pallipes* and *Platynus* sp., were placed in the cage. They were eaten with relish. Next a smaller carabid, *Agonoderus pallipes*, was tried. The song sparrow proved to be so fond of this species that he ate fifteen within three minutes. In order to test the strength of the fluid emitted by these beetles, I placed the tip of the abdomen of one of them against my tongue. The resulting sensation was a sour taste, followed by an acute burning which lasted for ten minutes.

A few experiments were then made with the larger, more beneficial beetles. In three instances *Harpalus pennsylvanicus* was offered to the song sparrow, and in one case it was eaten, but with no apparent relish. The fact that this beetle could be eaten at all, and without producing any ill effects, seemed strange when it was recalled that once when one was accidentally mashed against my neck the spot was so severely blistered that the soreness lasted for three days.

The sparrow's limit in the line of such hot food was found when another carabid (*Chlœnius æstivus*) was placed in the cage. He seized it immediately, bit it several times, and then swallowed it. In an instant he showed distress, lowered his beak, and attempted vomiting. For several seconds the muscles of his throat worked convulsively with a swallowing motion, then he made a vigorous attempt, which lasted for a minute, to disgorge the beetle. He next flew spasmodically about the cage, every now and then whetting his bill against the wires. At the end of five minutes he suffered most acutely and stood wabbling from side to side with his mouth wide open and the whole throat rapidly pulsating. At the end of ten minutes it seemed death must ensue, but in ten minutes more he was decidedly better, and in an hour had completely recovered. Several days later I put another in the cage. The song sparrow instantly seized it, but, quickly finding out his mistake, hastily dropped it, shaking his head violently and scurrying to the opposite side of the cage. This beetle and other larger useful species seem from these experiments to be safe from the attacks of sparrows, although they are preyed on by many species of larger birds.

Quite a number of miscellaneous experiments were carried out with the song sparrow. Skin-beetles (*Trox* sp.), which derive their popular name from their occurrence on hides in tanyards, and bark-beetles (*Trogosita cœrulea*), which inhabit the bark of dead trees, were eaten with apparent relish. A long-horned beetle (*Neoclytus erythrocephalus*), which is supposed to mimic a wasp, was offered, and was eaten without hesitation. A stingless parasitic wasp (*Oplion bilineata*), placed in the cage met with a similar fate. Stinging insects were not given the song sparrow, but some English sparrows to which they were offered refused to touch them; which seems to indicate that sparrows are able to distinguish between stinging and stingless insects that resemble each other closely. Spiders were eaten by the song sparrow with a relish that helped to explain the frequency with which they are found during stomach examinations. A lace-wing fly, an insect of the most nauseating odor, was also eagerly devoured. Stink-bugs of the genera *Brochymena* and *Euschistus* were refused; but smaller bugs of the families Reduviidæ and Lygæidæ, though strong scented, proved to be exceedingly palatable; and another ill-smelling bug, the common water-strider (*Hydrotrechus* sp.), was eaten without hesitation. Small brown species of leaf-hoppers and a green form (*Diedrocephala*) were offered to the song sparrow and were quickly snapped up, showing that some device other than ill flavor probably protects them ordinarily, since leaf-hoppers, though often exceedingly abundant where sparrows occur, seldom, if ever, form any significant part of the food.

Several experiments were made with Lepidoptera. A salt-marsh-caterpillar moth (*Leucarctia acræa*), a white and yellow insect warningly colored and possessing a powerful odor, was given to the song sparrow, but was refused. Then a yellow swallow-tail butterfly (*Papilio turnus*), also a warningly colored insect, but not having a rank smell, was liberated in the cage. It flew against the sparrow, frightening him badly; but in five minutes the bird had recovered his courage, and, giving chase to the butterfly, captured it, after several minutes of lively fluttering, and finally succeeded in killing it and eating some of the viscera. If the chase had occurred out of doors, the butterfly would have had no difficulty in getting away. Medium-sized brown millers (Noctuidæ) were eaten with great relish, despite the fact that they were seldom found during stomach examinations, which suggests the possibility of their being overlooked because of the difficulty of recognizing their remains among the comminuted contents of stomachs. It is not improbable that these insects are frequently eaten by some species of sparrows.

Some experiments in feeding the song sparrow with different kinds of seeds were attempted, but he did not lend himself with any degree of enthusiasm to this line of work. Lamb's-quarters, amaranth, and polygonums were frequently placed in the cage, but only starvation could bring him to eat any of them, probably because he had been supplied too long with canary seed, which seemed to suit his palate. Experiments with dandelion and amaranth seeds have already been referred to (see pp. 22 and 26). The seeds of chickweed and pigeon-grass were eaten with great relish. It was interesting to note the way in which the bird hunted for food of this kind. He searched about the bottom of the cage, sometimes hopping, sometimes walking, and when he had secured all the uncovered seeds, he scratched in the sand for the buried ones. When thus engaged he would give a quick jump into the air, swinging his feet forward and then backward, scratching the ground with both feet at once, and apparently with motionless wings.

During January and February, 1900, a series of experiments was carried out to ascertain how far sparrows are responsible for the dissemination of the seeds upon which they subsist. The only birds available for these experiments were seven English sparrows, but the conclusions reached are, in a measure, applicable to all sparrows. The birds were fed seeds of different weeds, and all their droppings were examined to ascertain the condition in which the seeds were voided. The seeds of climbing false buckwheat and ragweed were found to be thoroughly pulverized, although quite a number of small fragments of the black, shiny seed coats of the former were found in the droppings. This result was expected, since the birds crack these seeds before swallowing them. The seeds of lamb's-quarters and amaranth were next tried. These, because of their small size and hard structure, it was supposed would be swallowed whole and would partially escape destruction in their passage through the birds' digestive tracts. But such proved not to be the case. The birds cracked them as they had the others. Halves of seed shells were found in the seed cup, and many broken smaller pieces; and the droppings of the birds showed no whole seeds, although some few empty split seeds with the two half shells clinging together were found. Usually only the finely pulverized dust of the seed coats was found in the fæces. When the sparrows were not under experimentation they were fed chiefly on millet, the grain of which is inclosed by two corrugated siliceous glumes. These were similarly removed by the birds. No whole seeds were found in the dung, and only an occasional small piece of one of the glumes. The closely related seeds of pigeon-grass (*Chœtocloa viridis*) are inclosed by much stronger glumes, but when these were fed to the birds the cracking of the grain and the removing of the glumes appeared to be just as complete as in the case of the millet, and seemed as certainly to preclude any possibility of subsequent germination.

Some experiments were made with the seeds of crab-grass (*Panicum sanguinale*). A well-known firm of seedsmen suggested to the Department the probability that the English sparrow was responsible for the occurrence of crab-grass in lawns and golf links sown with pure seed of the finest brand. Much complaint was received from buyers of lawn-grass seed because, after the seed was planted and the turf well established, crab-grass appeared in it, often so thickly as to necessitate plowing under the whole lawn. Two sparrows were fed with 100 of the seeds. Instead of manipulating them as they did the seeds of millet and pigeon-grass they swallowed them whole, without removing any of the ensheathing glumes. Gravel was furnished so that the grinding power of the birds' gizzards might be facilitated, and after several hours 6 droppings were collected and examined. No whole seeds were found. There were, however, three nearly entire glumes and a pulverized mass of matter which under the microscope was seen to consist of fragments of broken glumes. Several days later about 500 crab-grass seeds were fed to the same sparrows, no gravel being given at the time or during the interval between the two experiments. Twelve droppings were examined and the results were substantially the same as in the first experiment. Three different sparrows were then fed with about 1,000 crab-grass seeds and 20 droppings were collected. The result was the same. Not one of the 1,600 seeds was passed in a condition to germinate. Although these experiments are by no means conclusive, yet they strongly indicate that the English sparrow, however harmful it may be in other ways, can not be held responsible for the occurrence of crab-grass in lawns. It is possible that the damage is due to the wind. Seeds of crab-grass are light and buoyant, and those attached to fallen spikes would be particularly likely to be carried along by the wind on gusty days.

FOOD OF SPARROWS BY SPECIES.

SNOWFLAKE.

(*Passerina nivalis.*)

The snowflake is a bird of the arctic tundra, above the limit of tree growth. In North America it breeds about Hudson Bay, in the northernmost parts of Labrador and Alaska, and to the northward. In its northern home it is a white, black-blotched sparrow, of whose habits very little is known, except that it makes a feather-lined nest on the ground, in which it rears four to five young on a diet which probably consists principally of insects. After the breeding season, however, a buffy brown becomes mixed with the black and white, and the birds assume a more sparrow-like aspect. They migrate southward with the first severe cold weather, some of them coming as far south as the northern half of the United States, where their appearance is regarded as a sure sign that winter has begun in earnest. Often a flock of a thousand will come with a blizzard, the thermometer registering 30° to 40° below zero; and in their circling, swirling flight, as they are borne along by the blast, they might well be mistaken at a distance for veritable snowflakes. They settle in the open fields and along railroad tracks, where they secure some food from hayseed, grain that has sifted out of the grain cars, and seeds of weeds that grow along the tracks. Here they remain until April, when, in obedience to the migrating instinct, they journey north to nest on the treeless plains of the arctic regions.

The snowflake differs from many other winter sparrows, such as the tree sparrow, junco, and white-throated sparrow, in that its flocks act more nearly as units, the alarm of a single member causing the whole flock to whirl up into the air and be off. A further difference may be noted in its strictly terrestrial habits. When not flying, it is almost invariably found on the ground; and when it does happen to alight in a tree, awkward wobblings betray its discomfort. Where the feeding conditions are favorable, immense flocks of snowflakes may be seen apparently rolling like a cloud across the land, this curious effect being due to the rear rank continually rising and flying forward to a point just in advance of the rest of the flock. At times they feed in company with horned larks. This is particularly noticeable when snow has covered the tops of weeds, and the birds are obliged to repair to the crests of wind-swept knolls where the ground is comparatively bare of snow and the weeds are, consequently, exposed.

Little information can be given concerning the summer food of the bird. It is said to feed on the seeds of shore or marsh plants, and on aquatic invertebrates, including small crustaceans and mollusks. Baird, Brewer, and Ridgway state that the adult birds feed extensively during May on the buds of *Saxifraga oppositifolia*, that they hunt on the houses of Greenlanders for insect larvæ, and that a captive bird showed a liking for cracked corn and wheat.[1] In an article on the birds of the Pribilof Islands, by Mr. William Palmer,[2] there is a brief note on the habits of the Pribilof snowflake (*Passerina nivalis townsendi*), which are probably similar to those of the common snowflake (*Passerina nivalis*). Mr. Palmer submitted to me for examination the stomach contents of two old birds and five young ones secured on St. Paul Island. Every one had eaten either larval or adult flies, belonging principally to the families Chironomidæ and Tipulidæ. Some of the birds had been feeding on maggots, which they had doubtless obtained from the decaying carcasses of fur seals, at that time numerous on the island. One of the adult birds had eaten a small green leaf-beetle of the family Chrysomelidæ, and one of the young birds had eaten a spider. The only vegetable matter found was in the stomachs of two of the young birds, in one case consisting of a few fragments of grass, and in the other of 40 unidentified boat-shaped yellow seeds. Two of the young birds had swallowed little fragments of the volcanic lava of which St. Paul Island is composed. Mr. Palmer saw a parent snowflake make repeated trips to the shore of an inland lagoon for the purpose of securing for her young a supply of dead sand fleas (amphipods of the subfamily Gamarini).

Forty-six stomachs of snowflakes, collected from January to April, inclusive, mainly in Ontario, Wisconsin, Michigan, and New York, have been examined. From these examinations it appears that at this time of the year the birds are great consumers of weed seed, but that they also eat considerable grain. Professor Aughey states that in Nebraska they are accustomed to feed on the eggs of the Rocky Mountain locust during the winter;[3] but the stomachs examined in the laboratory of the Biological Survey contained nothing but vegetable matter. One-third of this was grain, while almost the whole of the remainder consisted of weed seed. Grain constituted 96 percent of the contents of the 13 stomachs collected in April, but this large percentage arises from the fact that all the April collections were made on the same day when the birds happened to be feeding on oats. Had these same birds been collected a few days earlier or later, they might have been feeding almost entirely on weed seed, which would, of course, have changed the character of the stomach contents, and so reduced the percentage of grain food not only for April, but for the season as well. A larger collection of stomachs would also, no doubt, have shown a smaller percentage of grain. The grain taken is for the most part gleanings after harvest, in the stubble-field, about buildings, or along roads or car tracks, and so of little or no economic importance, the kinds most frequently secured being wheat, corn, oats, and millet. Some of this may come from newly sown fields; but the amount thus taken is probably so small that such damage as results is little compared with the service rendered by the destruction of weed seed.

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[1] Hist. North American Birds, Vol. I, p. 513, 1874.

[2] Fur Seals and Fur-Seal Islands, Part 3, p. 424, 1899.

[3] First Ann. Report U. S. Entomological Commission, App. II, p. 29, 1878.

From the examination of the stomachs collected, it would appear that the snowflake derives fully half its subsistence from two weeds—amaranth and ragweed, and that it does not to any great extent feed on the seeds of crab-grass, pigeon-grass, or other grasses, though it should be stated that McIlwraith reports it as eating the seeds of broom sedge (*Andropogon scoparius*).[1] Only 1 percent of the food contained in the 46 stomachs examined was grass seed. But in addition to the fact that the number of stomachs examined was too small to permit final conclusions to be drawn, for other reasons this should not be taken as showing a distaste for grass seed. The taste for similar food, as shown by the partiality of the birds for grain, and the quantity of grass seed eaten by the closely allied, more southerly ranging longspurs, indicate that the abstinence of the snowflake from this food is due to necessity and not choice. We must remember that the grass seed, which falls to the ground when ripe instead of clinging to the stalk, as do many of the seeds of amaranth, lamb's-quarters, and ragweed, is probably buried under the snow during most of the time the snowflakes are here. The amaranth is tall and its seeds are particularly clinging, and after very heavy snowfalls it is probably the most available food supply the snowflakes have. Its seeds form half the food found in the stomachs collected in February and March, some of which contained from 500 to 1,500 each. Such a wholesale destruction of the seeds of this rank weed as is thus indicated is not accomplished by any other bird whose food habits have thus far been investigated. With most species of seed-eating birds amaranth is by no means an important article of diet.

On account of its good work as a weed destroyer and the apparent absence of any noticeably detrimental food habits, the snowflake seems to deserve high commendation, and should receive careful protection. Feeding in latitudes that have been deserted by most other weed-destroying birds, these birds render a distinct and most effective service to the Northern farmer. And to this should be added that it is their habit, and that of their congeners, the longspurs, to feed far out in the open plains without regard to the presence of trees or shrubs. In this way they accomplish work that would otherwise be left undone; for most of the other members of the sparrow family that subsist entirely, or nearly so, on weed seed in the winter will not be found far from convenient shelter to which they can repair in case of danger.

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[1] Birds of Ontario, p. 310, 1894.

LAPLAND LONGSPUR.

(*Calcarius lapponicus.*)

The Lapland longspur is another sparrow of the Arctic zone. It is called longspur on account of the great development of its hind claw, a feature characteristic of the snowflake, also, but to a slightly lesser degree. It ranges a little farther to the south in winter than the snowflake, and resembles the latter somewhat in its winter plumage of mixed brown, though the white-marked wings and tail of the snowflake serve to distinguish it from the longspur.

Mr. William Palmer states that the longspur of St. Paul Island (*Calcarius lapponicus alascensis*) builds a grassy nest either on a slope or on the open tundra, in which 5 eggs are usually laid. He collected 6 nestlings in whose stomachs was found, as in the stomachs of the young snowflakes of St. Paul Island, the red and black volcanic lava of which the island is composed. One of the longspur stomachs contained in addition a few fragments of the cuticle of small insects, but the others showed no traces of anything but the lava.[1]

Of the winter habits considerably more is known. The birds come with the snowflakes in the autumn and go away with them in the spring. Like the snowflakes, they are protectively colored, strictly terrestrial, and highly gregarious. Baird, Brewer, and Ridgway state, quoting Richardson, that longspurs eat grass seed, juniper berries, and the samaras of pines.[2] In his interesting account of the Lapland longspur in 'Birds of Manitoba,' Mr. Ernest Seton Thompson speaks of seeing on the plains flocks of tens of thousands, and refers to their voices as a tornado of whistling. He states that in May these enormous flocks feed in newly sown grainfields, and that the stomachs of the birds he shot contained oats, wheat, buckwheat, and grass seed.[3] Professor Aughey found that longspurs, like the snowflakes, had fed on eggs of Rocky Mountain locusts.[4]

The following details are based on the examination of 113 stomachs, collected from December to May, inclusive, in the States of Wisconsin, Illinois, Minnesota, Iowa, Kansas, and Texas. The examinations, as might be expected from the time and places of collection, show a very small quantity of animal food, only 6 percent, composed entirely of insects, the remaining 94 percent of the food being grain and weed seed. The largest percentage of insect food for any one month is 24 percent taken in December, an unusual month in which to find the maximum insect consumption. This apparent anomaly is readily explained, however, by the fact that all the December stomachs were collected in Texas, where insects are active throughout the winter and where the birds thus have opportunities for insect diet that do not prevail in more northerly sections. The insects making up the December food consist of weevils, ground-beetles, leaf-beetles (of the genus *Systena*), and grasshoppers (of the genus *Tettix*). No insects were eaten during the other months, except in May, when one longspur had caught a spider and another had eaten several cocoons of a certain species of tineid moth, which is also an occasional article of diet with the closely allied snowflake.

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[1] Fur Seals and Fur-Seal Islands, part 3, p. 423, 1899.

[2] Hist. North American Birds, Vol. I, pp. 516 and 517, 1874.

[3] Proc. U. S. Nat. Mus., Vol. XIII, p. 590, 1890.

[4] First Ann. Report U. S. Entomological Commission, App. II, p. 29, 1878.

As indicated by stomach examination, Lapland longspurs derive nearly three-fourths of their subsistence in winter from grain and grass seed. The remainder is divided among such plants as ragweed, sorrel, amaranth, lamb's-quarters, purslane, sedge, and different polygonums. The grain taken consists chiefly of oats, wheat, barley, and millet, and constitutes 27 percent of the total food, millet alone making up 19 percent; but most of the birds whose stomachs contained grain were collected in stubble-fields, where they were feeding on waste grain, and so doing no damage to crops. Probably newly sown fields suffer most from their visits. They eat millet with avidity whenever and wherever it can be obtained, and undoubtedly would seriously damage this crop if it were not that it is sown after they have left for the north in the spring and harvested before they return in the autumn. They may possibly make themselves obnoxious in certain sections, as do the tree sparrows and English sparrows, by plundering millet stacks left exposed during winter; but thus far there has been no evidence of this, and it seems probable that little or no harm is done in this way. The quantity of waste millet they eat, however, lessens their effectiveness as weed destroyers. Of the food of 40 birds that were collected from a Kansas farm in January, in or near millet stubble, 63 percent consisted of millet.

When, as frequently happens, neither millet nor other grain is available, the longspur resorts to the seeds of other similar plants, destroying large quantities of the seeds of such noxious weeds as pigeon-grass, crab-grass, and other panicums. And in high latitudes, where all such plants are snow covered, they feed on amaranth, lamb's-quarters, polygonums, and ragweed. Like the snowflakes, they are to be credited with feeding in higher latitudes than are occupied by other sparrows during the winter, and on more open plains than the others frequent.

VESPER SPARROW.

(*Poœcetes gramineus and Poœcetes g. confinis.*)

The vesper sparrow is a bird of the upper Austral and Transition zones. Its breeding range covers such portions of the United States and Canada as are included in these zones, though it rarely or casually occurs in the Great Basin and California. In winter it is found from the southern part of this range as far south as Vera Cruz, Mexico. It is a bird of the dry, open upland, where its attractive song may be heard throughout the summer, particularly in the evening. It is found most frequently along roadsides or in grassy fields. When disturbed while feeding it flits up from the ground, spreading its white-splashed tail, and alights but a short distance away to resume its work. It is not as gregarious as the snowflake and Lapland longspur; for although several families may usually be seen in one company during the summer, and loose flocks of 20 to 50 may be noted during the southern migration, yet no such immense concourses are to be encountered as are frequently seen in the cases of those birds.

One hundred and thirty stomachs of vesper sparrows, collected from a dozen States, but mostly from Massachusetts, New York, Iowa, and Kansas, have been examined. The food for the year, exclusive of March, as indicated by these stomach examinations, consists of 69 percent of vegetable matter and 31 percent of animal matter.

The diet of a bird varies with the season. Thus, during the winter, practically the entire food of this sparrow is vegetable matter, while in summer its food is mainly animal matter. The animal food, at zero in winter when the snow covers the ground, rises with the temperature of the advancing season, and attains its maximum of 90 percent with the full heat of summer. It then gradually falls as summer declines and autumn progresses, until the return of winter again marks its minimum. The animal matter consumed comprises one-third of the total food of the year, and is made up of insects. The vegetable food consists of seeds. The insect portion of the diet is divided as follows: Beetles, 12 percent; grasshoppers and other Orthoptera, 11 percent; smooth, hairless caterpillars, 5 percent, and bugs (Heteroptera and Jassidæ), ants, and other Hymenoptera, taken together, 2 percent. Beetles and grasshoppers form the bulk of the animal food, as they do with many other species of birds. As soon as the beetles begin to crawl and take wing the bird is on the alert to capture them, and by May they have increased to one-third of the total food; but as grasshoppers become more and more abundant with the further progress of the season, these increase proportionately in the food until they become its chief constituent. The bird, however, is evidently very partial to beetles, and does not abandon them when the grasshopper diet is at its maximum, and even in winter an occasional hibernating beetle is plucked from its winter quarters and eaten.

Dung-beetles, weevils, click-beetles, ground-beetles, and leaf-beetles seem to be preferred to other kinds. The little dung-beetles of the genera *Aphodius* and *Atœnius*, which are extremely abundant in the pastures where the vesper sparrow nests, form 4 percent of the year's food. As they are practically neutral, however, in their effect upon agriculture, their destruction is of little interest. The destruction of weevils is more serviceable, for these include many of our worst pests. Weevils of the genus *Sitones* and several other members of the family Curculionidæ are small, hard insects, apparently as inedible as gravel, but they seem to be relished, as they form 4 percent of the year's food, and in June amount to 20 percent of the food for that month. Click-beetles, which are also pests, are taken to about half this extent. Useful predaceous beetles amount to 2 percent of the year's food. Remains of ground-beetles and their larvæ were found in four of the 130 stomachs examined. In one of these was also found a tiger-beetle, a most active flying insect that seldom falls prey to birds. The remaining 1 percent of the coleopterous food consists of small dark or green leaf-beetles of practically no economic importance, which seem to be eaten most freely in midsummer.

From June to September grasshoppers and other Orthoptera predominate over all other forms of insect food. Those eaten are principally short-horned grasshoppers of the genus *Melanoplus* and allied genera. In July, when they attain their maximum, they constitute 41 percent of the month's food. Professor Aughey found that every one of five vesper sparrows he collected and examined had fed on these destructive insects, and that the stomachs averaged more than 13 each.

Cutworms, army worms, and other smooth caterpillars that infest upland grass lands are less prominent in the food of the vesper sparrow than grasshoppers and beetles, perhaps because they are less readily obtainable. They are eaten freely, however, and, as far as is shown by this investigation, form a larger proportion of the food of this sparrow than of that of any other, with the exception of the grasshopper sparrow and the dickcissel. In May they constitute 21 percent of the food. The remainder of the animal food is unimportant, and includes ants and other Hymenoptera, true bugs, leaf-hoppers, flies, spiders, snails, and according to Dr. Warren, earthworms.[1] These various elements amount to about 3 percent of the total animal food.

Sparrows are primarily seed-eating birds, and it is usually the vegetable element of their diet that is most conspicuous and most important. While this is also true of the vesper sparrow, yet it is true to a smaller degree than is common among sparrows. Its work as an insect destroyer is very great, measured by the sparrow standard, and becomes unusually prominent, particularly in summer. In July, when insects are abundant, the vegetable food declines to a tenth of the total food. Shortly after the beginning of August, however, it begins to rise steadily, until by winter it forms the entire fare. According to Dr. Warren, it includes, besides seeds, such fruits as mulberries, blackberries, and strawberries, and the buds of beech, maple, and apple;[1] but the examination of stomachs in the laboratory of the Biological Survey has as yet failed to disclose any other vegetable food than seeds. These seeds belong to the usual three groups, grain (11 percent), grass seed (16 percent), and weed seed (42 percent). Grain was found in 15 stomachs, of which 14 contained oats, the other wheat. Much of the grain was undoubtedly gleaned from stubble-fields; and it is probable that part of the oats had been taken from horse droppings, as this sparrow frequents roadsides. Several of the birds whose stomachs contained oats were collected on highways.

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[1] Birds of Pennsylvania, revised ed., p. 234, 1890.

The maximum amount of grain, 20 percent, was procured from oat stubble in August. Four stomachs collected near oat stubble at Dry Creek, Montana, contained little else than oats. Oats were also conspicuous in stomachs of birds collected from stubble-fields at Escondido, Cal., during November and December. Some little damage may be caused to grain at harvest or sowing time, but thus far no complaints against this sparrow have been received by the Department of Agriculture.

The vesper sparrow is less partial to grass seed than many other species of sparrows, but agrees closely with them in the kinds selected. Pigeon-grass and crab-grass are eaten, and, to a slight extent, timothy and paspalum. The quantity of grass seed consumed being comparatively small, that of weed seed, which includes the seeds of ragweed, amaranth, lamb's-quarters, wild sunflowers, polygonums, and purslane, is correspondingly large. Ragweed and various polygonums alone furnish 16 percent of the food, which equals the percentage of all the various kinds of grass seeds combined. Amaranth and lamb's-quarters are, apparently, not relished as greatly as purslane and wild sunflower, to which the bird seems to be extremely partial. Although the vesper sparrow is not found as far from cover as the snowflake and the longspur, yet it feeds farther out in the field than most sparrows, and thus accomplishes more valuable service as a weed destroyer than many that feed to an equal extent on weed seed. This same characteristic increases the efficiency of this highly insectivorous sparrow as a consumer of grasshoppers, caterpillars, and weevils. Its value to the farmer is beyond question and should secure for it the fullest protection.

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[1] Birds of Pennsylvania, revised ed., p. 234, 1890.

IPSWICH SPARROW.

(*Ammodramus princeps.*)

The Ipswich sparrow, a comparatively new bird to science, was discovered by Mr. C. J. Maynard among the sand hills of Ipswich, Mass., in 1868. Its breeding place was not known until 1884, and its breeding range was fully established only a few years ago. In 1894 Dr. Jonathan Dwight, jr., discovered that it breeds only on Sable Island, a small sandy islet about 100 miles off the coast of Nova Scotia. In winter it migrates to the mainland and may be found along the coast south to New Jersey and as an accidental visitant as far as Georgia. The bird is likely to be confused with its congener, the savanna sparrow, and with the vesper sparrow, but it is lighter and larger than the former, and in flight may be readily distinguished from the latter by the absence of white in its outspread tail. It is a very rare bird, and this fact, added to its exceedingly limited range, prevents it from having any appreciable economic importance.

The notes on its food habits, contained in Dr. Dwight's comprehensive monograph,[1] are based on the examination of 56 stomachs, which he collected both in winter and summer and submitted for examination to Prof. F. E. L. Beal. It was found that in summer four-fifths of the food consists of animal matter, while in winter more than four-fifths is vegetable matter. A great deal of mineral matter is also taken into the stomach. It is a curious fact that one-third of the contents of winter stomachs was found to be sand. The vegetable food comprises seeds and berries. Grass seed, particularly in winter, forms the staple diet, the little round red seeds of *Eragrostis* being very often selected. Lamb's-quarters, different polygonums, and dock are also taken, and one stomach collected on the sand hills of Rockaway Beach, Long Island, on December 17, contained several kernels of rye. The fruit element consists of bayberries, blueberries, and bunchberries.

The animal food is made up of beetles, wasp-like insects, bugs, caterpillars, flies, spiders, and snails. In June the most common article of diet is the little dung-beetle (*Aphodius fimetarius*). Tiger-beetles are also eaten, a rather unusual element of sparrow fare, but due, probably, to the abundance of these active insects upon the sand dunes which the bird frequents.

SAVANNA SPARROW.

(*Ammodramus sandwichensis savanna* and *Ammodramus s. alaudinus.*)

The savanna sparrow, as just stated, resembles the Ipswich sparrow. There is also some danger of confusing it with the song sparrow, to which it is similar in general appearance; but it lacks the black breast patch which is usually so conspicuous in the latter, and has a yellow mark behind the nostril which the song sparrow lacks. Taking the two subspecies together, the savanna sparrow has an extensive breeding range. That of the eastern bird (*Ammodramus sandwichensis savanna*) extends from Labrador and the Hudson Bay region southward through Canada into the northern tier of States, while that of the western bird reaches the Arctic coast on the north and the Mexican border on the south. The summer habitat thus comprises parts of the Boreal, Transition, and Upper and Lower Austral zones. In winter the bird is found in the Southern States and Mexico and sometimes in Cuba.

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[1] Memoirs Nuttall Ornithological Club, No. II, pp. 41, 42, 1895.

Examination has been made of 119 stomachs. These represent all the months of the year except December and February, and were collected in 12 States ranging from Massachusetts to California and in the District of Columbia, Nova Scotia, and Newfoundland. Their food contents consisted of 46 percent of animal matter, insects and their allies, and 54 percent of vegetable matter, practically all seeds. The savanna, Ipswich, and grasshopper sparrows, and, to a slighter degree, all other members of the genus *Ammodramus*, are much more highly insectivorous than other sparrows. They take equal rank in this regard with such notable insect destroyers as the catbird, robin, and bluebird. With the savanna sparrow the distribution of animal matter is as follows: Coleoptera, 15 percent; Lepidoptera, 9 percent; Orthoptera, 8 percent; Hymenoptera, 5 percent; Hemiptera, 2 percent; Diptera and miscellaneous insects, 4 percent, and spiders, with a few snails, 3 percent.

This sparrow appears to be the greatest eater of beetles of all the sparrow family. Beetles constitute the most important element of its animal food, and are eaten during every month in which stomachs were obtained, though of course in very small quantities during the winter months. In May and June they are so eagerly sought that they form one-third of the entire food of those months. Ground-beetles, leaf-beetles, and weevils (Rhyncophora) are most frequently selected, but click-beetles, dung-beetles (*Aphodius*), rove-beetles (*Staphylinus*), pill-beetles (Byrrhidæ), and certain allies of the firefly (Lampyridæ) are also eaten. Of the three groups first mentioned weevils are apparently preferred. These destructive insects are eaten to the extent of several times as much as any other kind. In August 11 percent of the food consists solely of weevils, mainly of the genus *Sitones* and related forms. The leaf-beetles taken include the genera *Chætocnema* and *Chlamys*. Some harm is done by the destruction of several of the more useful species of ground-beetles, but as these amount to but 2 percent of the total food they constitute a small offset to the favorable character of the rest of the beetle food. The lepidopterous food does not differ noticeably from that of sparrows generally; that is to say, it consists of Noctuidæ, taken usually as larvæ. Army worms were found in several stomachs collected in the

State of New York during an invasion of these pests in 1896. In its destruction of Orthoptera the savanna sparrow resembles the vesper sparrow, especially in the kinds chosen, though it is somewhat less efficient. Still, it does excellent work, for it takes grasshoppers in quantity from June to August, and in July eats them to such an extent that they constitute 34 percent of its food during that month. Ants amount to about 4 percent of the diet, and include both typical ants (Formicidæ) and stinging ants (Myrmicidæ). This shows a greater predilection for these insects than is displayed by any other sparrow, with the exception of the white-throat. The Hemiptera taken comprise both true bugs and leaf-hoppers and the Diptera consist of crane-flies and small species of horseflies.

The character of the vegetable food shows the savanna sparrow to be a great consumer of grass seeds. It is not harmful to grainfields, however, as the grain taken amounts to only about 1 percent of the food, and this consists almost entirely of waste wheat and oats. During August, a month in which many birds exhibit a great liking for a cereal diet, a number of savanna sparrows were collected from oat and barley fields, but their stomachs contained nothing but insects. Grass seed, largely pigeon-grass (*Chœtocloa*) and panic-grass (*Panicum*), amounts to 31 percent of the food. Other seeds, mainly such weed seeds as are taken by the vesper sparrow, make up practically all of the remaining 22 percent of the vegetable matter, the only exception being a few blueberries found in one of the stomachs.

It appears from this examination that the savanna sparrow is an exceedingly valuable bird. During the winter, when it is most granivorous, more than half of its food consists of weed seeds; and from May to August, when it is most insectivorous, beneficial insects form only 3 percent of the food, while insects of the injurious class amount to 45 percent.

GRASSHOPPER SPARROW.

(*Ammodramus savannarum passerinus* and *Ammodramus s. perpallidus.*)

The grasshopper sparrow, also known as the yellow-winged sparrow because of the bright yellow on the outer edge of the wing, is a terrestrial species. It is not in the least degree gregarious, being found only in pairs, or at most families, in the dry, open, grassy or weedy upland which it frequents. It breeds in suitable localities throughout the entire eastern part of the United States and westward to and including the Great Basin, though it is not common west of the Rocky Mountains. But its range does not include the higher altitudes, nor always the higher latitudes, those that belong to the upper part of the Transition zone marking the lowest limit of its absence. Hence it is not found in the mountains or certain parts of the northern border, although in some places a milder climate carries its summer range into Canada.

An examination has been made of 170 stomachs of this sparrow, collected from both the East and the West and from February to October, omitting March. The food for the months represented, as indicated by the stomach examinations, consists of 63 percent animal matter and 37 percent vegetable matter. The percentage of animal matter is thus even greater than in the case of the savanna sparrow. Fifty-seven percent of the food is composed of insects, and 6 percent—the remaining animal matter—consists principally of spiders, with an occasional myriapod, snail, or earthworm. The beneficial insects consumed, comprising both larval and adult ground-beetles and parasitic Hymenoptera, amount to only 1 percent of the total food; while the destruction of injurious insects is forty-five times as great, and is distributed as follows: 8 percent harmful beetles, 14 percent caterpillars, and 23 percent grasshoppers. The beetles belong to three families: Click-beetles, mostly small species; weevils (*Sitones* and related genera); and the smaller leaf-beetles, noticeably *Systena blanda* and *Systena elongata.* Caterpillars are eaten more freely in May than at any other time, and constitute 33 percent of the food of that month. More than half the caterpillars destroyed are cutworms, which is a very large proportion, and shows an unusual liking for these destructive insects. In one stomach from Bourbon County, Ky., were 6 cutworms (*Nephelodes violans*), each an inch long. The army worm seems to be also a favorite article of diet.

The grasshopper sparrow received its name because of the character of its song, which closely resembles the stridulation of the long-horned grasshopper; but investigation of its food habits has shown that, by a curious coincidence, the name is fully as appropriate in consideration of its diet. Grasshoppers (Acrididæ and Locustidæ) form almost one-fourth (23 percent) of the food of the eight months in which the 170 stomachs examined were collected, and 60 percent of the food of June, in which the greatest quantity of these destructive insects is eaten. The genera *Xiphidium*, *Scudderia*, *Hippiscus*, and *Melanoplus* are best represented.

Among the sparrows of the farm seven are preeminently grasshopper destroyers—the dickcissel, and the grasshopper, lark, vesper, chipping, song, and field sparrows—and from May to August, inclusive, the insect-eating period, consume large quantities of these pests. The examinations of stomachs collected during this period show that grasshoppers form 41 percent of the food of the dickcissel, 37 percent of that of the grasshopper sparrow, 31 percent of that of the lark sparrow, 23 percent of that of the vesper sparrow, 21 percent of that of the chipping sparrow, 17 percent of that of the song sparrow, and 13 percent of that of the field sparrow. Among the stomachs of the dickcissel and grasshopper sparrows examined, however, were those of several nestlings, 14 and 13 of the two species, respectively; and as young sparrows are reared largely upon grasshoppers some allowance has to be made in these exceptional cases. But enough is certain to show that these two birds and the lark sparrow are most valuable destroyers of grasshoppers, while the work of the other four sparrows mentioned, though not so extensive, is yet of much importance. These figures give new meaning to the name by which the grasshopper sparrow is known.

Eleven percent of the total food comprises such insects as ants and little dung-beetles (*Atœnius* and *Aphodius*), and about 1 percent consists of bugs, the most common being leaf-hoppers (Jassidæ), leaf bugs (Capsidæ), assassin bugs (Reduviidæ), and the smaller soldier bugs, such as *Hymenarcys* and *Trichopepla.* The spiders, myriapods, earthworms, and snails, which constitute the remaining animal matter, should be classed as probably neutral.

The vegetable food of the grasshopper sparrow is of little importance when compared with that of other species. No fruit was found excepting a few blueberries in one of the stomachs, and grain, chiefly waste, forms only 2 percent of the food Of the seeds, wood sorrel (*Oxalis*) composes 2 percent of the food; ragweed, 5 percent; such grasses as pigeon-grass, panic-grass, and a few others less freely eaten, 17 percent; and various other plants—polygonums, purslane, ribgrass, and the sedges—11 percent. The entire weed-seed element, including the seeds of such grasses as are troublesome on the farm (7 percent of the total food), amounts to about one-fourth of the food.

The grasshopper sparrow in particular and the other species of the genus *Ammodramus* in general feed much less on vegetable matter than most other sparrows. Insects form their staple diet, and of these, beetles, grasshoppers, and caterpillars are the most important. As a destroyer of insect pests the grasshopper sparrow is most efficient. It is not only superior to other members of the same genus, but is even more efficient than such valuable species as the lark sparrow, vesper sparrow, and dickcissel; and, both its vegetable and animal food considered, it seems to be individually the most useful species of bird whose food habits have thus far been investigated. The injurious part of the food forms only 3 percent of the whole, while the neutral amounts to 24 percent and the beneficial to 73 percent.

HENSLOW'S SPARROW.

(*Ammodramus henslowi.*)

Henslow's sparrow is a rare and locally distributed bird of the eastern half of the United States. In appearance and habits it is similar to the grasshopper sparrow.

Four stomachs collected during the summer months contained beetles, cutworms, grasshoppers, bugs, and blackberries. The beetles consisted of ground-beetles (*Anisodactylus*), leaf-beetles, click-beetles, and weevils (Rhynchophora); the bugs, of soldier bugs and assassin bugs (Reduviidæ). Three stomachs collected on January 29 at Dallas, Tex., contained a spider, fragments of grass, and seeds of plants of the composite family.

Because of its small numbers and irregular, local distribution, this sparrow is of little economic importance.

SHARP-TAILED SPARROW.

(*Ammodramus caudacutus*, *A. nelsoni*, and *A. n. subvirgatus*.)

The sharp-tailed sparrow is so called from the fact that its tail feathers end in drawn-out points. With the exception of one species, Nelson's sharp-tailed sparrow, this is a bird of the Atlantic coast, breeding from Nova Scotia to Maryland and possibly to Virginia, and ranging southward in winter as far as the Gulf of Mexico. Nelson's sparrow (*Ammodramus nelsoni*) breeds in the fresh-water marshes of Illinois, Dakota, and Manitoba, but migrates in winter to the Atlantic and Gulf coasts.

Fifty-one stomachs of this sparrow, collected from May to October, that have been examined, contained 81 percent of animal matter and 19 percent of vegetable matter, chiefly grass seed. The animal food is distributed as follows: Hymenoptera, 3 percent; Coleoptera, 6 percent; Orthoptera, 7 percent; Lepidoptera, 14 percent; Hemiptera, 12 percent; Diptera, 5 percent; miscellaneous insects, 8 percent; and Amphipoda (sand fleas), Arachnida (spiders), and Mollusca (snails), 26 percent. The Hymenoptera were ants and Ichneumonidæ. The beetles were mainly *Sitones* and other weevils, some small ground-beetles, and occasionally a leaf-beetle, a rove-beetle, a tiger-beetle, or a dung-beetle. The Orthoptera were for the most part short-horned grasshoppers (Acrididæ), but some long-horned grasshoppers and crickets were taken. Sixteen of the birds had eaten Lepidoptera, a large number in view of the fact that all the birds examined were adults. One-third of the Lepidoptera were eaten as imagos, and these were practically all noctuid moths. These insects were so comminuted in the stomach contents that they could be recognized as moths only by pieces of their slender coiled probosces, or through a microscopic examination of the pulverized remains, which disclosed the characteristic toothed scales that make the down on their wings.

The food habits of the sharp-tailed sparrow have many striking peculiarities. The bird shows a greater liking than most species for bugs; and half of those eaten belong to the homopterous division and are for the most part leaf-hoppers (Jassidæ). These insects are, it is true, wonderfully abundant in the moist, grassy places where this sparrow lives, but they are not often eaten by other birds that inhabit the same kinds of places. Of the true bugs—that is, those belonging to the heteropterous division—both the smaller plant-feeding and the predaceous species are eaten. Perhaps the most curious feature of the bird's food habits is the liking shown for Diptera. These insects, mainly midges (Chironomidæ) and their larvæ, certain allied insects, and the smaller adult horseflies (Tabanidæ) constitute 5 percent of the food, probably a larger proportion of Diptera than characterizes the food of any other birds except flycatchers and those shore-inhabiting species in the far north which feed so extensively on Chironomidæ.

There is a difference in the food of the sharp-tailed sparrows collected by the salt water and those taken near fresh water, owing, no doubt, to difference of environment. The (28) salt-water birds had eaten no vegetable food but grass seed, while 7 of the (23) birds taken near fresh water (at Hillsborough, Nova Scotia) had also eaten other seeds, such as those of polygonum, lamb's-quarters, clover, and dandelion. The salt-water birds feed on the seeds of salt grasses and occasionally eat wild rice (*Zizania aquatica*); the fresh-water birds eat other grasses, particularly panicums.

The salt-water birds eat many sand fleas, small amphipod crustaceans belonging to the family Gammaridæ. These sand fleas are very abundant along the beach, and the birds pick them up either on the clean sand or amid seaweed or other shore débris. They constitute 16 percent of the food of the salt-water birds, but were not found in the stomachs of the fresh-water birds. Not one of the fresh-water birds had eaten a snail, while six of the other birds had found snails very palatable; in fact, one had eaten four at a meal. The birds collected in fresh-water marshes had fed on army worms.

The economic position of this sparrow is so similar to that of the next species, the seaside sparrow, that for the sake of convenience the two birds will be grouped together in considering their relation to crops.

SEASIDE SPARROW.

(*Ammodramus maritimus.*)

The seaside sparrow is a very dark-colored bird for a sparrow, and has a yellow line behind each nostril. It breeds along the Atlantic coast from Massachusetts to Georgia, and is characteristic of the seashore. Unlike the sharp-tailed sparrow, it is never found away from salt water. Often, particularly in autumn, seaside and sharp-tailed sparrows may be found congregated in loose flocks.

The food habits of the two sparrows are very similar, both in elements and proportions of the food. There are, however, some minor differences of details. Thus, the seaside sparrow does not take nearly so many sand fleas (Amphipoda) as its congener, and according to Baird, Brewer, and Ridgway,[1] it feeds on small crabs, which as far as known form no part of the food of the sharp-tailed sparrow.

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[1] Hist. North American Birds, Vol. I, p. 561, 1874.

The sharp-tailed and seaside sparrows have a very limited range, a mere strip on the Atlantic coast, and probably do not come in contact to any extent with cultivated crops. In so far as they destroy insect enemies of salt-marsh hay they are helpful, and in so far as they destroy enemies of insects which prey upon this crop, they are harmful; but otherwise they exercise little influence on agriculture. The examination of 81 stomachs of both species indicates that 2 percent of the food consists of insects which probably exert a beneficial influence on the salt-hay crop, 30 percent consists of insects which are perhaps injurious to it, and 10 percent consists of spiders, concerning whose relation to it there is much doubt. The remaining 58 percent of the food is made up of approximately equal parts of insects and seeds of plants having little, if any, relation to the hay crop. The birds do not prey on the salt-marsh caterpillars, so destructive to the hay, and they destroy a considerable amount of the seed of the marsh grasses, which is probably an injurious effect. Thus, investigation shows that the two species are apparently of little economic importance.

LARK SPARROW.

(*Chondestes grammacus* and *Chondestes g. strigatus.*)

The lark sparrow (fig. 31), also called snake bird in certain localities on account of its striped head, is extremely abundant on the plain and prairie regions of the United States. It is found in open country from the Pacific coast almost to the Alleghenies and from British Columbia and Manitoba as far south as Mexico and Guatemala. The white feathers in its tail suggest the vesper sparrow, a bird with which it agrees quite closely in habits and habitat. It is strikingly marked

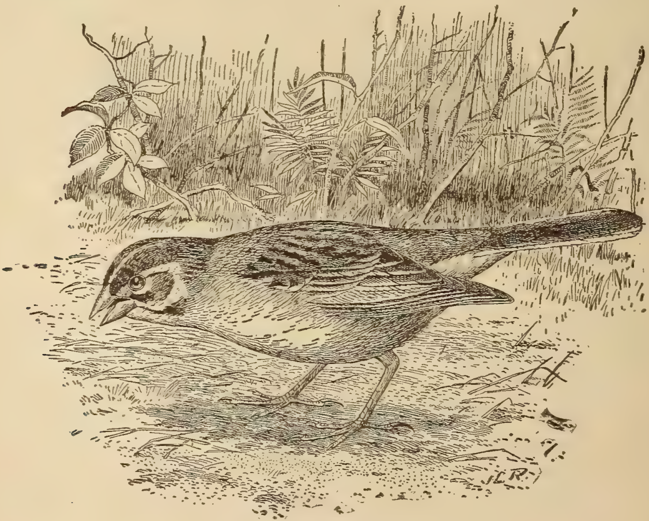

FIG. 15.—Lark sparrow.

and a very fine songster, two qualities that have caused it to become a favorite cage bird.

Its food habits have been investigated by the examination of the contents of 167 stomachs, collected during every month in the year except March. Most of these stomachs were collected in Kansas, Texas, and California, but a number were taken in the Dakotas, Michigan, Iowa, and the Province of Ontario. The food consists of animal matter (all insects) 27 percent, and vegetable matter (all seeds) 73 percent.

The lark sparrow is, with the exception of the dickcissel and grasshopper sparrow, the most valuable grasshopper destroyer of all the native sparrows. More than half of its animal food (14 percent of the total) consists of these insects, and in June they constitute 43 percent of the diet. On the prairies and plains this bird does much good in helping to check invasions of the Rocky Mountain locust. The preponderance of grasshopper food in the diet dwarfs the other elements of the insect fare, which is rather less in proportion than is usual with sparrows. A fair quantity of weevils was found in the stomachs, but other beetles as well as caterpillars appear far below the general average, although in its elements the animal food conforms well with that of other species of sparrows.

The vegetable food is of especial interest. One-half of it consists of the seeds of grain and grass, a fact which fully sustains the bird's specific name of *grammacus*. Pigeon-grass is largely fed on, but a marked partiality is likewise shown for grasses of the genus *Panicum*. The seeds of Johnson grass are also eaten freely, especially in the case of birds collected in Texas in December. The total consumption of the seeds of various grasses during the year amounts to 21 percent of the food.

The lark sparrow is more of a grain eater than the majority of other native sparrows; corn, wheat, and oats constitute 13 percent of its diet. The greatest part, however, is secured in winter; the maximum amount, 42 percent, is eaten in January, and grain constitutes 28 percent of the February food; hence, much of it must be picked up as waste. The birds collected during April, May, and September, when grain is usually sown, had eaten nothing but weed seeds and insects, which seems to show that the lark sparrow takes no part in the disturbance of newly sown grain, so annoying in the case of some species of grain-eating birds; and though cereals form 19 percent of the food of July and 12 percent of that of August, no complaints of damage to harvests have been received by the Department, and it is likely that much, if not all, that is taken at this time is picked up from the ground, and that its grain eating is therefore of little consequence.

The most peculiar feeding habit of the lark sparrow is its partiality for the seeds of leguminous plants, such as those of cassia, clover, and alfalfa, which are freely eaten. They form 8 percent of the food for the entire year, but this percentage is probably larger than it would have been had the stomachs which were examined been collected from more localities. Most of the birds that had eaten largely of these seeds were obtained during the months of November, December, and January in southern California, and to quite an extent from newly sown alfalfa fields.

About half of the remaining 30 percent of the food consists of ragweed and polygonum nearly equally divided, while the rest is made up of a variety of weed seeds, among which those of wild sunflowers and purslane appear the most prominent, while wood sorrel (*Oxalis*), lamb's-quarters, and amaranth play a minor part.

From this investigation it appears that the lark sparrow merits a high place among the useful tenants of the farm. The weed seed destroyed more than twice outweighs the grain consumed, which, as shown, is probably not taken in a harmful way; and beneficial insects do not rise to 1 percent of the food, while injurious insects amount to 25 percent.

HARRIS'S SPARROW.

(*Zonotrichia querula.*)

Harris's sparrow occurs from Saskatchewan south to Texas, and is not found regularly west of Montana or east of Illinois. It rivals the fox sparrow in size, and is of most striking appearance in its summer dress, with its glossy black crown and throat, large reddish beak, and bright coat of the usual sparrow mixture of colors. In winter the black is lost from the plumage and the bird resembles a long-tailed immature male English sparrow.

In habits Harris's sparrow is most like its two congeners, the white-throated and white-crowned sparrows. Nehrling speaks of observing it in Texas during November mixed in with flocks of thousands of juncos, white-crowned, and field sparrows. In these flocks there were seldom more than six to twelve Harris's sparrows. He caught several and kept them in confinement. They became tame and relished grasshoppers, moths, beetles, millet, kafir corn, and canary seed.

One hundred stomachs have been examined, which were collected principally in Saskatchewan, Kansas, and Texas, from October to May, inclusive. As is the case with many of the birds that breed for the most part to the north and merely winter with us, the stomach contents are chiefly vegetable in character, the animal matter amounting to but 8 percent. This 8 percent comprises about the same kinds of insects, spiders, and snails that enter into the fare of other sparrows, but the quantity of leaf-hoppers is unusually large (2 percent of the food), a taste which this sparrow shares with the sharp-tailed sparrow and Thurber's junco. Of the vegetable food, 25 percent is made up of the seeds of wild fruits and various miscellaneous plants of uncertain economic position; 10 percent of grain, which includes rather more corn than wheat and oats and is chiefly waste kernels; 9 percent of grass seed, mainly pigeon-grass, crab-grass, June grass, paspalum, and Johnson grass; 6 percent of the seeds of amaranth, lamb's-quarters, wild sunflower, and gromwell, and 42 percent of ragweed and polygonum. These figures indicate that it is advisable to afford this species all possible encouragement and protection.

WHITE-CROWNED SPARROW.

(*Zonotrichia leucophrys*, *Zonotrichia l. gambeli*, and *Zonotrichia l. nuttalli.*)

There are three subspecies, or geographic races, of white-crowned sparrows. The first that was described, *Zonotrichia leucophrys*, is a bird of the Hudsonian life zone, breeding in the very high mountains of the western United States and eastward to Labrador and the Hudson Bay region. In winter it is found throughout the United States and as far south as the valley of Mexico. The second subspecies, Gambel's sparrow (*Zonotrichia leucophrys gambeli*), is not found east of the Great Plains, and breeds to the north of the United States. The third subspecies, Nuttall's sparrow (*Zonotrichia leucophrys nuttalli*), is confined to the Pacific coast region, and occurs from British Columbia to Lower California.

Two hundred and seventeen stomachs of these three subspecies, collected during every month of the year except August, have been examined. One-fourth of the food contained in these stomachs was found to consist of animal matter, and three-fourths of vegetable matter. The animal portion resembles that of other sparrows in character, but differs somewhat in the proportions of the various constituents. Caterpillars form 9 percent of the total food, or more than one-third of the animal food, which is in excess of the usual proportion of these pests found in sparrow stomachs. Ants and parasitic wasps amount to 6 percent of the total food, also an unusually large proportion. The percentage of beetles (5 percent) is, on the contrary, rather below the average; and that of grasshoppers (1 percent) is remarkably small. The remaining 4 percent of the animal food is composed of spiders, bugs, and miscellaneous insects in the usual proportions.

The vegetable part of the food consists of 51 percent of weed seed, 15 percent of grain, 4 percent of grass seed, and 5 percent of fruit. The amount of grass seed consumed is noticeably smaller, while the fruit element is noticeably larger than is common in sparrow food. This fruit-eating proclivity and apparent lack of appetite for grass seed and grasshoppers characterizes the food habits of all the sparrows of the genus *Zonotrichia*.

Owing to marked differences of food habits among these three subspecies of white-crowned sparrows, it is desirable to consider each separately, though the limited material, especially in the case of *gambeli*, renders cautious conclusions necessary.

Ninety-four stomachs of the typical white-crowned sparrow (*Zonotrichia leucophrys*) have been examined. They were collected from September to May, inclusive, in Connecticut, Michigan, Illinois, Iowa, Kansas, Texas, and the District of Columbia. Like most of our northern sparrows, this species subsists during the winter almost entirely on seeds. Its tendency to become somewhat insectivorous in warm weather is indicated by the fact that 11 percent of the food in May and September consisted of ants, caterpillars, weevils and other beetles, and spiders. If stomachs could have been collected during the summer months, the proportion of the insect part of the food would, no doubt, have been much larger.

Of the vegetable fare, grain possesses the first interest. It consists almost entirely of oats, although in a few exceptional cases corn or wheat had been picked up. Grain was found in a quarter of the stomachs examined, and amounts to 12 percent of the total food for the year. In May it attains its maximum of 27 percent, indicating the presence of the habit of feeding in newly sown fields, though no direct evidence of this fault has been had and it is possible that the grain is largely or entirely derived from scattered waste grain. The small grass-seed item includes crab-grass and other panicums, pigeon-grass, and the Johnson grass of the South, which forms a part of the diet of the lark sparrow and Harris's sparrow.

Ragweed is as important as grass seed is unimportant, constituting 20 percent of the entire food. Amaranth, lamb's-quarters, chickweed, gromwell, and wild sunflower are also included in the weed-seed element of the food.

Fruit did not occur to any appreciable extent in the stomachs examined. Audubon states that as this sparrow passes down into the United States it feeds eagerly on grapes,[1] but no especial damage of this kind has been reported to the Department, and only 5 of the 94 stomachs contained any fruit, and they only elderberries and blackberries. This of course is merely negative evidence, and further examination may confirm Audubon's observations. Warren has noted a peculiar habit of this species in eating the blossoms of bushes and trees when it was migrating north in the spring.

By way of summary it may be stated that the total damage which this beautiful sparrow accomplishes appears from the present investigation insignificant when compared with the service it renders in reducing the weed-seed harvest.

Our knowledge of the food habits of Gambel's sparrow (*Zonotrichia leucophrys gambeli*) is exceedingly meager. Only 23 stomachs were available for examination, and 11 of these were collected on Saturnia Island, British Columbia, during the month of April. The remainder were taken in Arizona, Utah, Montana, and the Dakotas, during the months of April, May, September, and October.

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[1] Birds of America, Vol. III, p. 159, 1841.

The bird appears, as well as can be judged by means of this limited material, to be much more insectivorous than the typical white-crowned sparrow. In fact as much as 70 percent of the food contents of the stomachs collected on Saturnia Island consisted of insects. Spiders and sand fleas (Amphipoda) were also eaten. Cutworms and closely allied smooth caterpillars form half of the insect food, while beetles, including ground- and leaf-beetles, weevils (Rhynchophora), scarabæids, and lampyrids (*Podabrus*), and such insects as ants and useful wasps make up the remainder of the food. These highly insectivorous habits appear surprising when the date of collection of half of the stomachs is considered. It is probable, however, that on Saturnia Island insects are obtainable much earlier than at an inland station of the same latitude, because of the comparatively mild climate of the coast.

The vegetable food proved interesting for two reasons. In the first place only one bird had eaten grain, and in the second place not one had touched grass seed. The latter fact appears in harmony with the habits of all the members of the genus, but the former is unexpected and in striking contrast with the habits of Nuttall's sparrow. The miscellaneous weed-seed element of the food includes chickweed, lamb's-quarters, wild sunflower, polygonum, and dock. A few violet and mallow seeds were also found in the stomachs.

With regard to the food of Nuttall's sparrow (*Zonotrichia leucophrys nuttalli*) it is possible to speak more authoritatively since 100 stomachs of this subspecies have been examined. These were collected in California during all the months of the year except August and September.

The summer food of this bird is of especial interest, as it affords the only clew had to the food habits at this season of the other two subspecies. A dozen stomachs were collected during June and July, which contained 43 percent of animal matter and 57 percent of vegetable matter. The insect material is distributed as follows: Orthoptera, together with larval Lepidoptera, 4 percent; Coleoptera, 9 percent; Heteroptera and Jassidæ, 7 percent, and Hymenoptera, 23 percent. Click-beetles, weevils (Rhynchophora), lampyrids (fireflies and their allies), dung-beetles (*Aphodius*), and leaf-beetles make up the bulk of the beetles. The 23 percent of Hymenoptera, which for any sparrow is unusually large, is composed for the greater part of useful parasitic species, and so must be counted heavily against the bird.

During cold weather this bird becomes a seed eater. In fact, from October to February nine-tenths of its nourishment is derived from grain, weed seed, and the seeds of plants of little economic importance. As with the preceding species, no grass seed is eaten. Owing to this apparent distaste for grass seed and to the absence of ragweed from its habitat, it seems to be forced into eating the seeds of lamb's-quarters and amaranth, which are usually a second choice with sparrows. So freely does it eat the seeds of these two weeds from October to February that 35 percent of the food is composed of nothing else. No other sparrow, except the snowflake, takes these noxious seeds to any approximate extent. The only other weed seeds devoured in quantity by Nuttall's sparrow come from such leguminous plants as cassia, and from purslane and plants of the pink family.

The one character that chiefly serves to distinguish this sparrow from its brethren is its inordinate appetite for grain. It seems to prefer oats, but will take corn, wheat, or barley whenever an opportunity offers. The cereal element in the stomachs collected from October to February, inclusive, forms 39 percent of the total contents, and in January attains a maximum of 50 percent. The grain is obtained from newly sown fields, from standing grain, and from the harvest field where it is picked up from the stubble. The greater part of the birds whose stomachs contained the largest proportion of grain were collected in newly sown fields. Dr. T. S. Palmer has repeatedly observed this sparrow in large flocks on newly sown land and apparently causing damage.

With this bad record in the grainfield and with the destruction of an unusually large proportion of valuable parasitic wasps to be charged against it, the value of this white-crowned sparrow of the Pacific coast is open to question. The only real offset to this damaging record is to be found in the destruction of weed seeds, particularly those of lamb's-quarters and amaranth. But, full weight being allowed to this credit, the bird seems to be the least beneficial of any thus far considered.

WHITE-THROATED SPARROW.

(*Zonotrichia albicollis.*)

The white-throated sparrow (see frontispiece) is as characteristic of the Canadian zone as the typical white-crowned sparrow is of the Hudsonian. It breeds in the northern tier of States west to Montana and north into Canada, migrating in autumn into the middle Eastern States, some individuals going as far south as Florida and Mexico. It closely resembles the white-crowned sparrow in appearance and habit, but its song is distinctive, consisting of a high, plaintive, drawn-out pipe, that when once heard is seldom forgotten. In New England this song has been thought to suggest the words, Peabody! Peabody! Peabody! and the sparrow has received the name of 'Peabody bird.' Equally characteristic, though less generally known, is a curious clinking call-note that is uttered at first loudly, then in a softer, more conversational tone, when the birds are repairing in flocks to their quarters for the night during their sojourn in the South.

The white-crowned sparrow, the tree sparrow, and the fox sparrow breed in the far North, where agriculture is limited; but both the summer and winter ranges of the white-throated sparrow are, to a considerable extent, within agricultural life zones. Its economic relations are therefore more important.

Dr. B. H. Warren states that during spring in Pennsylvania he has seen white-throated sparrows feeding on buds and blossoms of beech, maple, and apple.[1] These observations have not yet been confirmed in the laboratory examination of stomachs. While in the field in May I have noted white-throated sparrows eating the fruit of elm trees, but have never found them damaging buds or blossoms.

Two hundred and seventeen stomachs, collected during every month in the year except June, have been examined. Most of these stomachs were collected in New York and Pennsylvania, but a large number came from Iowa, Minnesota, Georgia, and Texas, and some from New Brunswick. The food for the year, as a whole, as indicated by stomach contents, consists of 19 percent animal matter and 81 percent vegetable matter. Of the vegetable food, 3 percent is grain, 50 percent weed seed, and the remainder chiefly wild fruit.

The insect food resembles that of many other species in general character, but some interesting differences appear when it is viewed in detail. Hymenoptera constitute 6 percent of the year's food; Coleoptera, 5 percent; Heteroptera and Diptera, taken together, 3 percent, and Lepidoptera, 3 percent, the customary quota of spiders, millipedes, and snails supplying the remaining 2 percent of the animal food. The Hymenoptera are distributed among parasitic species (2 percent), ants (3 percent), and miscellaneous (1 percent). In its partiality for ants the white-throated sparrow resembles the savanna sparrow. Of the beetles eaten, ground-beetles, leaf-beetles, click-beetles, weevils (Rhynchophora), and members of the families Histeridæ and Scarabæidæ enter most frequently into the diet. The Scarabæidæ include principally dung-beetles (*Aphodius*), but occasionally the larger species, such as the May-beetle or rose-beetle, are eaten. The depredations of the latter on vineyard and flower garden are seldom disturbed by birds, on which account the service done by the white-throated sparrow in eating it has added value. Weevils furnish the greater part of the beetle food, and during May, when they are eaten more freely than at any other time, form 15 percent of the food.

The same absence of Orthoptera (grasshoppers, etc.) from the food is noticeable in the investigation of the white-throat that has been noted in the case of its congener—the white-crown. These insects were selected by only 2 of the 217 birds examined. Professor Aughey, however, found that 5 individuals which he examined had devoured an average of 18 Rocky Mountain locusts apiece,[2] and a captive white-throat kept in the laboratory of the Biological Survey ate grasshoppers with an avidity that bordered on greed. It would be wise, therefore, not to draw any final conclusions from the absence of grasshoppers in most of the stomachs of white-throats and white-crowns examined.

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[1] Birds of Pennsylvania, revised ed., p. 237. 1890.

[2] First Ann. Report U. S. Entomological Commission. App. II, p. 31, 1878.

The most striking point in the food habits of this sparrow is its fondness for berries. From July to November, inclusive, one-fourth of its food consists of berries. At this time it eats the fruit of the blueberry (*Vaccinium pennsylvanicum* and other species), wild cherry (*Prunus serotina*), mountain ash (*Sorbus americana*), green-brier (*Smilax glauca*), strawberry (*Fragaria* sp.), spice bush (*Benzoin benzoin*), wild sarsaparilla (*Aralia* sp.), elder (*Sambucus canadensis*), blackberry (*Rubus villosus*), dogwood (*Cornus florida*, *alternifolia* and *stolonifera*), and the high bush cranberry (*Viburnum opulus*). White-throats have been seen feeding in large numbers on the blueberries which grow profusely upon the sides of Mount Chocorua, New Hampshire. So much does it relish food of this character that during July fruit constitutes 44 percent of the total food of the month.

In addition to eating berries as long as they last, it picks up their dry seeds and cracks them for the meat long after the fruit pulp has disappeared and the seeds have been scattered on the ground. From January to May it feeds on the seeds of such fruits as the blueberry, blackberry, elderberry, and grape. Some of these are doubtless cracked by the bird's beak, and others by the muscular grinding gizzards. Broken fragments of grape and blackberry seeds are often found in the stomachs of birds collected in the spring. Nearly one-third of the food contents of the stomachs of 33 whitethroats collected in Texas during January and February consisted of bits of the seeds or drupes of various wild berries.

It is highly probable that as these sparrows are picking up seeds of berries they get some that belonged to berries eaten at some previous time by berry-eating birds, whose stomachs were not powerful enough to crush the seeds, which, consequently, were voided and scattered upon the ground. This double consumption of seeds is also common to the different white-crowned and fox sparrows, the cardinal grosbeak, and the mourning dove.

Some grass seed is consumed, principally seeds of such troublesome species as pigeon-grass, crab-grass and other panicums, and Johnson grass. This element forms about 5 percent of the total food, and is taken chiefly during September, when it amounts to 24 percent of the food of the month. A little amaranth and lamb's-quarters are eaten; and gromwell, chickweed, wood sorrel, sedge, violet, and sheep sorrel are all represented in the diet. But the principal weed seeds found in the stomachs are those of ragweed and different polygonums. As a destroyer of ragweed this sparrow seems to have no equal among finches, and the song sparrow is its only rival as a consumer of polygonums. The two weeds form 25 percent of the food for the year, of which ragweed furnishes 9 percent and the polygonums 16 percent. During October ragweed alone constitutes 45 percent of the month's food.

The white-throated sparrow may be regarded as a valuable bird on the farm; it has a good record as a weed destroyer, its fruit eating is largely confined to wild berries, and it does little damage to grain fields.

TREE SPARROW.

(*Spizella monticola* and *Spizella m. ochracea.*)

The tree sparrow (see frontispiece) breeds in Labrador and the Hudson Bay region and westward to Alaska. In the fall the birds come down from the north in immense throngs and spread over the United States as far south as South Carolina, Kansas, and Arizona. During the winter, in company with juncos, white-throats, white-crowns, and fox sparrows, they give life to the hedge rows, tangled thickets, and weed patches. Their song is not heard until just before they leave in the spring, but throughout the winter wherever they are encountered a mingled chorus of innumerable conversational and alarm notes greets the ear. In appearance they somewhat resemble chipping sparrows, and have sometimes been called winter chippies; but they are readily distinguished from that bird by their larger size and by a dark spot on the breast, the chipping sparrow's breast being unmarked.

Five hundred and seventeen stomachs have been examined, collected at points ranging from Massachusetts to the District of Columbia, and westward as far as Iowa and Kansas, and during the period from October to May. As indicated by these examinations, the food of the tree sparrow during its stay in the United States is almost entirely made up of seeds, which amount to 98 percent of the total food contents of the stomachs examined. The bird shows an essential difference from its associates, however, in its large consumption of grass seed, fully half of its food consisting of this element, panicums, pigeon-grass, and allied grasses being apparently preferred. It feeds on cultivated millets. Mr. F. F. Crevecoeur, of Onaga, Kans., states that the tree sparrow is as much of a pest as the English sparrow in damaging shocks of Hungarian millet which are not securely covered in the fall and winter. Mr. Crevecoeur sent in a score of stomachs of tree sparrows which were crammed full of seeds of millet. But in sections where millet seed is not left exposed the birds are very serviceable, for they then turn their attention to such weeds as pigeon-grass, crab-grass, poverty grass (*Aristida*), and sheathed rush grass. They also feed to a limited extent on the seeds of other grasses. Each of several of the stomachs examined contained from 100 to 200 seeds of timothy, June grass, or broom sedge.

Nearly two-thirds of the vegetable food that is not grass seed is derived from such plants as ragweed, amaranth, lamb's-quarters, and various kinds of polygonums. The remainder is made up of a variety of seeds none of which taken alone plays any significant part in the diet, but which amount altogether to 10 percent of the food. These are for the most part wild sunflower, golden-rod, chickweed, sedge, birch, purslane, wood sorrel, violet, and sheep sorrel. According to Dr. Warren, the tree sparrow feeds on wild grapes and cedar berries, but the laboratory investigations have thus far failed to show any remains of fruit other than some seeds of blackberry and blueberry, which were picked up in early spring.

The animal food during the bird's stay in the United States amounts to 2 percent, a quantity too small to be of much economic interest. It consists of weevils and other beetles, such as ground-beetles and rove-beetles, also wasp-like insects, ants, caterpillars, bugs, grasshoppers, and spiders.

The value of the bird lies chiefly in the fact that barely 1 percent of its food consists of grain, while more than 50 percent is made up of weed seed. As it is one of the most abundant species, fairly swarming in the hedge rows that skirt the fields, it is capable of rendering considerable service to agriculture.

CHIPPING SPARROW.

(*Spizella socialis* and *Spizella s. arizonæ.*)

The chipping sparrow breeds in every State in the Union (with the possible exception of Florida), in Canada, and on the table-lands of Mexico. Its breeding range includes four life zones, the Canadian, Transition, and Upper and Lower Austral, but in autumn the general migratory movement carries all the birds into the Lower Austral and farther south—that is to say, into the Gulf States, Cuba, and Mexico.

This little red-capped bird, that often builds its horse hair-lined nest in the vines of the porch, is one of the best known of the native sparrows. Its semi-domestic habits cause it to be a general favorite, despite the fact that it is not gifted with pleasing vocal powers, but utters only an incessant metallic chip, and a song that suggests the note of a distant cicada. The eggs are a delicate robin's-egg blue spotted at one end with black, which is exceptional, most sparrow eggs having a whitish ground color overlaid with brownish markings. The two broods of from three to five young reared each year consume great quantities of caterpillars and grasshoppers. Dr. Clarence M. Weed has seen a chipping sparrow carry 50 caterpillars to its young in twelve hours.[1]

In its own feeding the bird is a noted destroyer of different caterpillars. Mr. E. H. Forbush speaks of its eating cankerworms and browntail-moth, tent, and gipsy-moth caterpillars;[2] Dr. B. H. Warren has seen it preying on the army worm;[1] Dr. Weed, quoting Miss Soule, states that it attacks the moths of the forest tent caterpillar,[2] an insect which has recently seriously damaged the maple-sugar industry in New England; and many observers have stated that it feeds on cankerworms and cabbage worms. I have never seen chipping sparrows feeding on cabbage worms, although I have frequently watched them hopping about among or near cabbages which were badly infested with worms.

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[1] Bull. No. 55, N. H. Coll. Agr. Expt. Sta., 1898.

[2] Mass. Crop Rept., Bull. 3, pp. 33-36, July, 1900.

Mr. Henry W. Olds states that a chipping sparrow visited his pea patch and busily fed on the pea lice which were seriously injuring the vines. I have found chipping sparrows at Marshall Hall, Md., feeding on the same insect. This pest (*Nectarophora destructor*) is comparatively new to science, having been first described in 1899, but during that year it caused a loss to the pea crop of Maryland of $300,000.[3]

Audubon states that the chipping sparrow takes berries,[4] and Mr. Percy Moore, of Philadelphia, reports that it feeds on wild cherries. Prof. F. E. L. Beal says that he has occasionally seen it taking a few cultivated cherries. Mr. F. C. Kirkwood calls attention to a very peculiar habit it has of sipping the sap of grapevines.[5]

Two hundred and fifty stomachs have been examined, collected from March to November, and throughout the country both in the East and West, principally, however, from New England to Virginia and from the States of Kansas, Iowa, Illinois, and California, the greater part of the western chipping sparrows coming from the last-named State. More collections were made in summer and early autumn than at any other season. Of the contents of these stomachs the total animal food, consisting of insects with an occasional spider, amounts to 38 percent; the vegetable food to 62 percent. Of the vegetable food, 4 percent is grain, principally oats; 48 percent grass seed; and 10 percent other seeds, such as clover, ragweed, amaranth, wood sorrel, lamb's-quarters, purslane, chickweed, knotweed, and black bindweed. Twenty-six percent of the grass seed is crab-grass and pigeon-grass, chiefly the former, the rest consisting of timothy, orchard grass, and other grasses. The seeds of crab-grass, whenever they can be obtained, form the most important part of the diet. During the last of August there were collected a dozen chipping sparrows that were feeding in a flock amid some crab-grass and other weeds which were getting the upper hand in a small garden, about an acre in extent, and it was found that the stomach of every one of the birds was crammed full of the seeds of crab-grass. The much smaller consumption of ragweed, amaranth, lamb's-quarters, and polygonum than on the part of tree, white-throated, and song sparrows is probably due to the smaller and less powerful digestive organs of the chipping sparrow.

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[1] Penn. Agr. Rept. 1896.

[2] Bull. No. 75, N. H. Coll. Agr. Expt. Sta., p. 121, 1900.

[3] Proc. Eleventh Ann. Meeting Assn. Economic Entomologists, pp. 94–99, 1899.

[4] Birds of America, Vol. III, p. 80, 1841.

[5] Birds of Maryland, p. 335, 1895.

No small service is rendered in destroying weed seed, but the utility of the species is manifested most strikingly in its animal food, three-fourths of which consists of noxious insects, principally caterpillars, weevils, grasshoppers, and leaf-beetles. Of the 38 percent of animal matter, weevils constitute 6 percent; leaf-beetles, 2 percent; other Coleoptera, including predaceous ground-beetles, dung beetles, click-beetles, and May-beetles, collectively, 3 percent; caterpillars, 9 percent; grasshoppers, 10 percent; and miscellaneous animal matter, consisting of leaf-hoppers, true bugs, ants, spiders, and parasitic wasps, 8 percent. The maximum monthly average of weevils, 16 percent, is attained in May. In June, when 93 percent of the food is composed of insects, grasshoppers form 36 percent, caterpillars 25 percent, and leaf-beetles 6 percent.

On the one side only 1 percent of the food consists of useful insects (predaceous beetles and parasitic wasps), while more than 25 percent is made up of insect pests; and on the other side, grain composes only 4 percent, in contrast to weed seed, which constitutes 40 percent. These figures clearly show the good service rendered to agriculture.

The food habits of this sparrow will receive further consideration in connection with those of the next species—the field sparrow.

FIELD SPARROW.

(*Spizella pusilla* and *Spizella p. arenacea.*)

The field sparrow (see fig. 16) summers in the northern half of the United States east of the Rocky Mountains and in southern Canada, and winters in the Southern States.

It can perhaps best be distinguished from the many small species of ground-colored birds by its reddish beak. It is thoroughly commonplace in appearance, and in habits is much shyer than the chipping and song sparrows, which may be called dooryard birds. Often seen in the same weed patch with these sparrows, it is nevertheless, as its name indicates, a lover of open lands. Here it builds its nest, generally among some small briers, and during the season rears two to three broods of three or four each. Its food habits are very similar to those of the chipping sparrow, as would naturally be expected, since both belong to the same genus. Forbush has found it preying on plant lice, tent caterpillars, cankerworms, and the caterpillars of the brown-tail moth.[1]

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[1] Mass. Crop Rept., Bull. 3, pp. 33–36, July, 1900.

The laboratory investigation includes 175 stomachs, collected during every month of the year, from 15 States and the District of Columbia, chiefly in New York, Massachusetts, and the District of Columbia in the East, and Kansas and Wyoming in the West. Of the total food they contained 41 percent was animal matter and 59 percent vegetable matter. Of the animal material weevils form 2 percent; leaf-beetles, 2 percent; ground-, tiger-, click-, and May-beetles, collectively, 9 percent; caterpillars, 4 percent; grasshoppers, 6 percent; leaf-hoppers, true bugs, sawflies, ants, flies, and spiders, taken together, 14 percent, and parasitic wasps, 4 percent. This last item is the principal point wherein the field sparrow differs in food habits from the chipping sparrow—a difference that is not to the advantage of the record of the species from an economic standpoint, since, as has been shown, these wasps are dangerous parasites of many caterpillars. Of the vegetable food 51 percent consists of the seed of grasses, for the most part such species as crab-grass and other panicums, pigeon-grass, broom sedge, poverty grass (*Aristida*), and sheathed rush grass. Seeds of such weeds as chickweed, lamb's-quarters, gromwell, amaranth, purslane, spurge, wood sorrel, and knotweed amount to 4 percent. The percentage of timothy is insignificant, but that of oats is comparatively large, as they constitute 4 percent of the food.

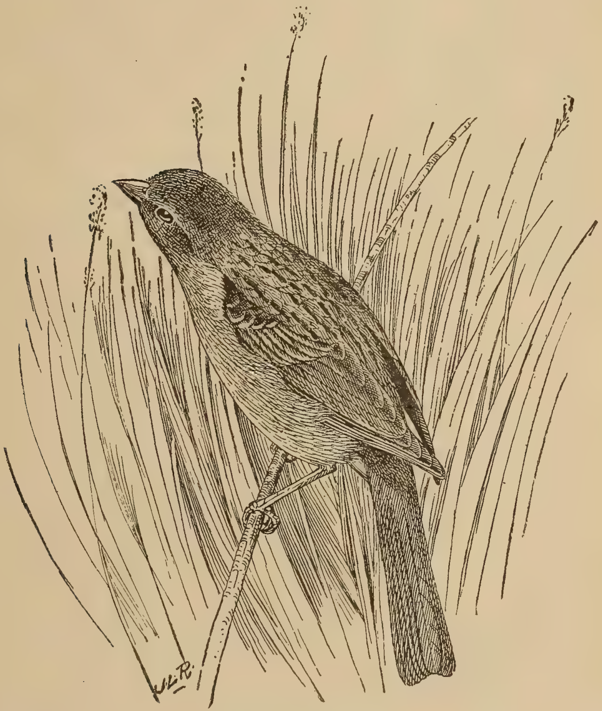

FIG. 16.—Field sparrow.

The amount of grain taken during most of the year is about 4 percent, but in August the bird visits oat stubble and feeds on oats, often to the extent of a quarter of its diet. The chipping sparrow has the same habit. Apparently no such predilection exists in the case of wheat. During the last week in June a dozen sparrows of both these species were collected in a wheat field at harvest time. They were, however, not eating wheat, but were feeding on insects and weed seed. Some of the oats that are found in the stomachs are obtained from horse droppings. This is particularly true in the case of the chipping sparrow, a species which is often found foraging along roadsides.

Both of these sparrows feed very little on any seeds other than those of grasses, in which propensity they are like the tree and lark sparrows. They subsist less on ragweed than any other species of upland sparrows, and take comparatively little lamb's-quarters or amaranth, but at times show a marked liking for wood-sorrel, chickweed, purslane, or some of the smaller-seeded species of polygonums.

Both of these birds are abundant and useful tenants of the farm, but comparison shows the chipping sparrow to have the more favorable food habits. It destroys fewer beneficial insects and more pests than its congener.

JUNCO.

(*Junco hyemalis* and subspecies.)

The junco (see frontispiece), unlike the chipping and field sparrows, is not a summer but a winter bird so far as most of the agricultural districts of our country are concerned. It is a bird of the Canadian and upper Transition life zones, and hence breeds principally in the mountains or near the Canadian border. In winter it migrates south, spreads over the whole of the United States—though less abundant in the northern portions—and ranges as far south as Mexico.

The best-known junco is the slate-colored, familiarly known as the snowbird, or sometimes black snowbird, in contradistinction to the snowflake of the Northern States. It comes from the north with the first frost, and is as definitely associated with the beginning of cold weather as the robin is with the first breath of spring. In its winter home the bird is very friendly and hops up to the doorstep for crumbs with the same engaging confidence manifested by the chipping sparrow in summer. But should the expected crumbs be wanting, it is not disturbed. With a sharp chirp sounding like the click of two marbles against each other it is off to the weed patches, or to the barn if the weeds are buried under the snow. From the haymow it can procure food, even though the snow be fence deep; and at such times, or during blizzards, a few meals of hayseed are not distasteful to it. But as soon as its forced retirement is concluded—that is, when the inclemencies that drove it to shelter have abated—it will be found, often in company with other winter sparrows, on the sunny hillsides which bristle with ragweed, cracking the seeds that are spread on the snow-covered ground.

The food habits of the junco are such as commend it highly to the farmer. An examination has been made of 299 stomachs, collected during every month in the year except May. They were secured chiefly along the Atlantic seaboard, but a fairly large number were obtained in the central part of the country and California.

The food for the year as a whole, as indicated by these stomachs, consists of animal matter 22 percent and vegetable matter 78 percent. The animal matter is distributed as follows: Orthoptera and Lepidoptera, each 2 percent; Hymenoptera, 3 percent; Coleoptera, 6 percent; miscellaneous insects, largely Hemiptera, 7 percent; and spiders, with a few snails and other invertebrates, 2 percent.

It will be convenient to consider the summer and winter feeding habits separately. The summer diet, as far as can be judged by the contents of 65 stomachs collected from June to August, inclusive, mainly in the mountainous regions of California and on Roan Mountain, North Carolina, is 49 percent animal matter and 51 percent vegetable matter. Insects of the useful class comprise 1 percent of ground-beetles and 5 percent of parasitic Hymenoptera. Insects belonging to the injurious category amount to 25 percent of the total food and are distributed as follows: Leaf-beetles, 2 percent; weevils (Rhynchophora), 8 percent; caterpillars, 4 percent; grasshoppers, 5 percent; and miscellaneous insects, largely true bugs, leaf-hoppers (Jassidæ), click-beetles, and longicorn beetles (Cerambycidæ), 6 percent. Neutral insects, mainly small dung-beetles, ants, and other insects of little or no economic importance, amount altogether to 16 percent of the food.

The vegetable food consists of various seeds, 49 percent of the total, and wild fruits, 2 percent of the total. The seed matter is distributed as follows: Grass seed, 5 percent; polygonum seed, 8 percent; violet seed, 9 percent, and miscellaneous seeds, mainly those of sedge, sheep-sorrel, wood sorrel, purslane, and chickweed, 2 percent. The remaining vegetable food is composed of wild fruit, and includes blueberries, blackberries, strawberries, and elderberries.

The summer feeding habits of the junco, although of a character highly creditable to the species, are not of much economic importance, since the habitat of this bird during the breeding season is largely beyond agricultural areas. But when the bird migrates to fertile districts and extends over the whole of the United States in autumn to remain until spring, it becomes a most important and useful bird. The animal food at this time, which is of the usual character, is too small to be important. The vegetable food, which constitutes 91 percent of the diet, may be conveniently divided into three nearly equal parts; the first of which is largely timothy, broom sedge, sheathed rush-grass, pigeon-grass, crab-grass, and other panicums, paspalum, and a small quantity of grain; the second comprises ragweed and polygonums; and the third includes the seeds of various plants the majority of which are such weeds as amaranth, lamb's-quarters, chickweed, purslane, tick-trefoil, vetch, gromwell, wood sorrel, sedge, sheep-sorrel, wild sunflower, and Russian thistle. The seeds of amaranth and lamb's-quarters are by far the most important in the diet. Few other sparrows eat as many of these seeds as the junco, which feeds on them chiefly in March when, doubtless, other and more palatable seeds are too scarce to be easily obtained.

The effect of the junco during its stay on agricultural land is that of an unmixed benefit, because the good done by its extensive consumption of weed seeds is not counterbalanced by any real harm; even the slight tendency toward grain eating is practically harmless, since most of the grain eaten consists of waste kernels.

SONG SPARROW.

(*Melospiza melodia* and subspecies.)

The song sparrow (see fig. 17), unlike the junco, occupies agricultural areas in summer. It breeds throughout the United States, including Alaska south of Unalaska, and is found also in Canada and Mexico. In winter there is a shifting southward, but the species is still to be found in most of the States except the northern tier.

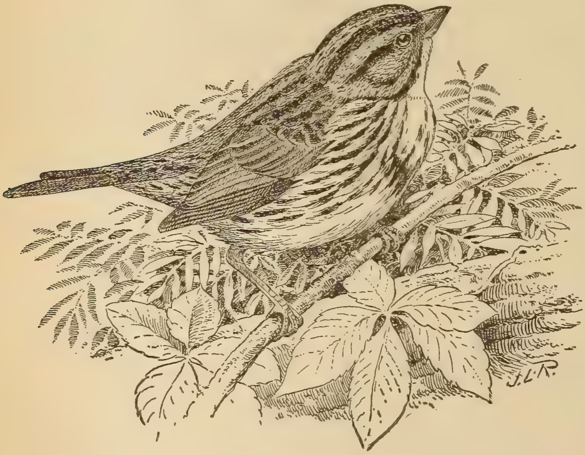

FIG. 17.—Song sparrow.

The bird honestly merits its title of song sparrow, for its bright, canary-like lay is one of the most attractive voices of the spring, and is familiar to many that do not know the identity of its author. In habitat it differs slightly from both field and chipping sparrows: it is not so often met with in the open country as the one, or in the orchard as the other, but is most likely to be found inhabiting bushes along water courses. Sometimes, however, it frequents the shrubbery near buildings, in which case it may often be seen, in company with worthless English sparrows, hunting about the barnyard for hayseed. It seeks its food on the ground, running in a peculiar mouse-like way through grass or weeds.

Its food, as indicated by the examination of 401 stomachs from 26 States and British Columbia, collected during every month in the year, consists of animal matter, insects with occasionally a spider or snail, 34 percent; and vegetable matter, mostly seeds, 66 percent. That the bird haunts damp localities is well shown by certain articles of its food, such as wild rice, sedge, smartweed, tall smooth panicum (*Panicum virgatum*), and spreading panicum (*Panicum proliferum*), sand-fleas, aquatic snails, tiger-beetles, May-flies, and dragon-flies. But it often leaves its favorite resort, along water courses, and seeks its food on the uplands with other species of sparrows, feeding on woodbine berries with white-throated sparrows, picking up seeds of crab-grass and ragweed in company with juncos and tree sparrows, devouring earthworms on the lawn with the robin, and even fighting with English sparrows for its share of bread crumbs upon the city street. When raspberries are ripe it will once in a while assist the catbird and brown thrasher in removing some of the choicest and most luscious. In Maryland it has a habit of hunting round wheat-straw ricks for grain that has not been entirely threshed out. Still, taken as a whole, the food habits of this popular cheery-voiced sparrow are not very different from those of a number of other species.

Of the vegetable portion (66 percent) of the year's food, 3 percent consists of ragweed, 5 percent of grain, 16 percent of polygonum and related seeds, 24 percent of grass seed, and 18 percent of miscellaneous seeds, such as those of wild sunflower, amaranth, lamb's-quarters, clover, gromwell, rib-grass, wild solanum, purslane, spurge, wood sorrel, dandelion, chickweed, dock, and sheep-sorrel. The last two are seldom eaten by most other birds. More polygonum seed is taken by the song sparrow than by any other sparrow, largely because most polygonums grow in moist places where song sparrows are often very abundant. Several species of polygonums are weed pests on low ground, and much good is done by the systematic destruction of their seeds by the song sparrow during every month in the year. More than half the grass-seed food belongs to such troublesome species as crab-grass and pigeon-grass. The bird is so numerous that it must destroy large quantities of these weeds. The seeds of other grasses, such as timothy, paspalum, old-witch grass, barnyard grass, tall smooth panicum, spreading panicum, beard-grass (*Andropogon*), orchard grass, sheathed rush-grass, yard-grass, wild rye, wild rice, and others form about 8 percent of the food.

The song sparrow, like the white-throated, white-crowned, and fox sparrows, manifests a taste for fruit, especially during July, when blackberries, strawberries, raspberries, blueberries, mulberries, and wild black cherries are eaten to the extent of nearly 8 percent of the food. This diet is largely abandoned when the weed-seed harvest is mature, though the bird occasionally feeds with others on the ripening crop of wild fruits during late summer and autumn. It has been observed eating elderberries, wild grapes, pokeberries, bayberries, and berries of the woodbine; but in spite of this taste and the bird's abundance among cultivated berry patches, it never, to any appreciable extent, does any damage to cultivated fruit.

Insects amount to about one-third of the annual diet, and from May to August, inclusive, when they are eaten most freely, compose more than half the food. Diptera constitute 2 percent of the year's food; Hemiptera, 3 percent; Hymenoptera, 4 percent; Lepidoptera, 6 percent; Orthoptera, 7 percent; Coleoptera, 9 percent, and miscellaneous insects, principally Neuroptera, Plectoptera, and Ephemeridæ, 1 percent.

The kinds eaten are for the most part the same as those taken by the chipping sparrow and field sparrow. The greater part of the Diptera are not the common house-flies, but mosquito-like flies belonging to the families Chironomidæ and Tipulidæ. They are eaten in both the larval and imago stages. Occasionally imagos of some species of horseflies furnish a part of a meal. The Hemiptera belong to both the heteropterous and homopterous divisions of the order. The Heteroptera include small bugs of nauseous odor, largely soldier bugs, leaf bugs (Capsidæ), and assassin bugs, and are usually species of little or no economic importance. The Homoptera are practically all leaf-hoppers (Jassidæ). Cercropidæ, the little bugs which are responsible for the so-called 'frog spit' or 'snake spit' which is often found adhering to grass in early summer, are sometimes eaten.

Half of the Hymenoptera entering into the food comprise ants belonging to both of the principal families Formicidæ and Myrmicidæ. It is highly probable that most of the ants are taken while flying, as many species of birds secure their ant food in the air. One-quarter of the hymenopterous food, amounting to about 1 percent of the total food for the year, consists of such parasitic species as flies (Braconidæ), ichneumon flies (Ichneumonidæ), and certain wasps (Scoliidæ); the remainder is made up of a few saw-flies, some joint-worm flies, cuckoo flies, and a number of the smaller bees (*Andrena*, *Halictus*, and other plant-fertilizing species).

The Lepidoptera (all moths) are principally larvæ of Noctuidæ, such as cutworms and army worms. They also include larvæ of Geometridæ and the occasional pupa of a tineid moth (Coleophora). Mr. E. H. Forbush discovered that the song sparrow will eat hairy caterpillars,[1] but none but the smooth kinds have thus far been found in the stomachs examined in the Biological Survey. In its destruction of Lepidoptera the song sparrow renders considerable service, especially during May and June, when 25 percent of its food consists of these pests. At this time it makes a business of hunting on the ground for cutworms, which, if allowed to live and mature, would undoubtedly do much damage. Several song sparrows were collected in New York State during an invasion of army worms in 1896, and it was found that they had preyed on these pests to a very considerable extent. Cankerworms and the larvæ of the gipsy moth and the brown-tail moth enter into the food, according to the observations of Mr. E. H. Forbush.[1]

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[1] Mass. Crop Rept., p. 36, Sept., 1899.

Orthoptera form only 7 percent of the annual food, but amount to 28 percent of the food for August. The short-horned grasshoppers eaten are chiefly the same kinds as those selected by other birds, that is, they comprise the various abundant species of the genus *Melanoplus*, such as the red-legged locust and the Rocky Mountain locust. Long-horned grasshoppers of the genera *Orchelimum*, *Scudderia*, and *Xiphidium*, which habitually infest moist meadows, are freely eaten. Crickets are, apparently, much relished. A number of stomachs contained several, and in one were found no less than 10.

Beetles seem to be eaten during every month in the year, but become most conspicuous in the stomachs in late spring and early summer. They are chiefly ground-beetles, leaf-beetles, click-beetles, weevils (Rhynchophora), and members of the families Histeridæ and Scarabæidæ; but a few long-horned beetles, tiger-beetles, and members of the families Lampyridæ and Mordelidæ are also taken. Ground-beetles constitute but 1 percent of the food, and the species that make up this insignificant percentage are the smaller, less useful forms, such as *Agonoderus*, *Platynus*, *Bembidium*, *Cratacanthus*, *Anisodactylus*, *Amara*, *Pterostichus*, and the smaller species of *Harpalus*. As sparrows are ground feeders, it would seem natural that more of the valuable ground-beetles would be destroyed by them than by birds that are more arboreal in their habits; but as a matter of fact they consume fewer than most of our common birds; and the larger, more useful species, which work the greatest destruction among insect pests, and which are eaten freely by many of the common birds of the farm, sparrows do not molest.[2] In July, 5 percent of the food of the song sparrow is composed of leaf-beetles, principally small species of the genera *Colaspis*, *Crepidodera*, *Chætocnema*, *Hæmonia*, *Odontota*, *Systena*, and to some extent *Epitrix*; and for the year as a whole these amount to 1 percent of the diet. Click-beetles and Histeridæ seem to be eaten only to a very slight extent, but weevils form the most important element of the beetle food, as they do in the case of most sparrows, amounting to 4 percent of the total food, and in June attaining a maximum of 11 percent. It seems strange that the bird should be apparently so little baffled by the wonderful protective adaptations of these beetles, many of which harmonize with their surroundings so completely as to be practically invisible to human eyes. The particular weevils most often selected include such forms as *Baris*, *Sphenophorus*, *Centrinus*, *Sitones*, *Phytonomus*, and *Tanymecus*.

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[1] Mass. Crop Rept., Bull. 3, pp. 33–35, July, 1900.

[2] Such effective carabids as *Carabus*, *Scarites*, *Pasimachus*, *Cychrus*, *Chlœnius*, and *Calosoma*, which are often found in the stomachs of larger birds, have never been met with in the stomachs of sparrows.

The Scarabæidæ eaten are for the most part the smaller forms of dung-beetles, especially *Aphodius fimetarius* and *Aphodius inquinatus*. The song sparrow does not, as a rule, attack such large forms as the May-beetle, but it probably feeds to some extent on medium-sized closely related forms, *Serica vespertina* and others, as it frequently preys on beetles of this size, such as those of the genus *Anomala*.

The rest of the animal food amounts to 2 percent of the total food, and is made up of snails, largely such aquatic species as pond snails; spiders, chiefly running species belonging to the family Lycosidæ; and some few thousand-legs of the genus *Julus* and closely allied forms.

Taking the food habits of the song sparrow as a whole, it will be readily seen that this bird does much more good than harm and is worthy of protection and encouragement. Only 2 percent of the food consists of useful insects, while 18 percent is composed of injurious insects; and grain, largely waste, amounts to only 4 percent, while the seeds of various species of weeds constitute 50 percent.

LINCOLN'S SPARROW.

(*Melospiza lincolni.*)

Lincoln's sparrow breeds in the highest parts of the Rocky Mountains and the Sierra Nevada and from the northern tier of States to Labrador and the Mackenzie and Upper Yukon rivers. In winter it is found throughout the southern half of the United States, but is rare and locally distributed in the East. To the untrained eye, it is practically indistinguishable from its congener, the ubiquitous song sparrow; but it is as distrustful as the song sparrow is confiding.

Only 31 stomachs of this species have been examined. These were collected during the months of February, April, May, September, and October, mainly in Massachusetts and New York. The food during these months, as indicated by the stomachs, consists of animal matter, 42 percent, and of vegetable matter, 58 percent. The animal matter is made up of 2 percent spiders and millepeds and 40 percent insects. Useful insects, largely Hymenoptera, with some predaceous beetles form 4 percent of the food, and injurious insects, 12 percent. Neutral insects, including beetles, ants, flies, and some bugs, amount to a fourth of the food. More ants (principally Myrmicidæ) and fewer grasshoppers are destroyed than by the song sparrow. The vegetable matter is divided as follows: Grain, 2 percent; seeds of ragweed and various species of *Polygonum*, 13 percent; grass seed, 27 percent, and miscellaneous seeds, principally weeds, 16 percent.

SWAMP SPARROW.

(*Melospiza georgiana.*)

The swamp sparrow breeds from southern New York, northern Illinois, and the Dakotas north to Manitoba, Labrador, and Newfoundland, and winters from southern New England, southern Illinois, and Kansas to the Gulf. It is distinguishable from the song sparrow by its unstreaked breast and brick-red crown. It is a timid bird and never abandons the tussocks and reeds of the marsh to come up to the shrubbery of the lawn or dooryard. Nor does it often leave its swamp to forage on cultivated land, a characteristic which makes it of less economic importance than many of our sparrows. Such species, if they figure at all in rural economy, act simply as a check on certain insects which might otherwise become abundant and spread from the swamp to farm lands.

The food from February to November, exclusive of March, as indicated by the examination of 72 stomachs, principally from Massachusetts, Connecticut, New York, and Pennsylvania, is divided as follows: Animal matter, 47 percent, nearly all insects; and vegetable matter, 53 percent, almost entirely seeds. An interesting fact in connection with the feeding habits was brought out in the study of a caged bird. It showed an aversion to picking up seeds from its seed cup, preferring to take them from the surface of its drinking vessel. This suggests the idea that it is possible that the bird was accustomed, in its swampy home, to gather seeds from the water, though it may be that it merely preferred wet seeds to dry, on account of having been used to seeds that were moist from contact with the damp ground. The swamp sparrow takes more seeds of polygonums than most birds, and eats largely of the seeds of the sedges and aquatic panicums that abound in its swampy habitat. The giant ragweed (*Ambrosia trifida*) is also well represented in its stomach contents.

Of the insect food (45 percent of the total) grasshoppers, etc., amount to 2 percent; parasitic and predaceous insects to 6 percent; caterpillars, etc., to 9 percent; and leaf-beetles and weevils to 11 percent. The remaining 17 percent consists of bugs (Heteroptera and Homoptera), ants (Formicina), flies (Diptera), and the smaller dung-beetles. The bird shows a marked taste for ants, one-seventh of the stomachs examined containing these insects, especially those of the family Myrmicidæ. Although many of the insects eaten by the swamp sparrow belong to families generally classed as injurious or beneficial, yet the particular species taken are mainly such as inhabit only swamps, and so have very little, if any, economic value.

FOX SPARROW.

(*Passerella iliaca.*)

The fox sparrow (see frontispiece) is one of the birds that characterize the Hudsonian life zone—that is to say, it is found breeding in the vast forest which stretches from Labrador to Alaska. Summering in this region, as it does, it is of no economic importance until it migrates south in autumn into the agricultural lands of Canada and the United States. It then spreads over the whole country to the Gulf of Mexico.

The fox sparrow is the largest sparrow in the United States, exclusive of Alaska. It is found often in the woods, where it is likely to be mistaken for a hermit thrush on account of its large size, reddish color, and spotted breast. Its song is utterly unsparrowlike, a unique performance that seems not in the least akin to bird music, but more like the soft tinkling of tiny silver bells. In food habits it is a true sparrow, showing some resemblance, however, to the cardinal grosbeak (also a member of the finch family) in its fondness for berries, or, as is more likely, berry seeds. Both the fox sparrow and the cardinal have powerful bills, and are thus able to feed on seeds which weaker-billed species of seed-eating birds can not crack.

The food, as indicated by the examination of 127 stomachs, collected principally in the Eastern States, and during every month excepting June, July, and August, consists of animal matter, 14 percent, and vegetable matter, 86 percent. The animal food is of little interest excepting in the month of April, when the bird begins eating largely of millepeds of the *Julus* group—20 percent of the food for the month consisting of these invertebrates—and at the same time develops such a taste for ground-beetles as to raise this item of its month's diet to 10 percent. The quantity of these useful insects destroyed during the summer, when the bird is in its home in the far north, is probably much less.

The vegetable food differs from that of most other sparrows, in that it contains less grass seed (only 1 percent), less grain, and more fruit, ragweed, and polygonum. Half of the food consists of ragweed and polygonum and more than a quarter of fruit. In its dependence on fruit the fox sparrow resembles the white-throated sparrow. It does no direct damage to cultivated fruit, though it occasionally eats the buds of peach trees and pear trees.[1] Bradford Torrey has observed it feeding on the fruit of burning bush (*Euonymus americana*).[2] C. A. Averill, Bridgeport, Conn., reports that he has found it eating the berries of the red cedar (*Juniperus virginiana*), and James H. Gaut, of the Biological Survey, says that he has seen it feeding on poke berries in November in Washington.

But although 28 percent of the food contents of the stomachs examined consisted of the seeds of berries and of fruit skin, it is safe to say that barely a third of this percentage represents actual fruit destruction, and that the remaining two-thirds of the seeds were eaten after the pulp of the fruit had been removed by other agents. In only 7 of the 127 stomachs examined was there any fruit skin found, and the seeds in the stomachs were often broken, and were usually eaten at a time when the whole berry or fruit was not obtainable. Thus, seeds of blueberries and elderberries were found in stomachs collected in March, and broken stones of grapes and blackberries in stomachs collected in May. It is obvious that the fruit to which these seeds originally belonged had been destroyed long before the birds picked up the seeds.

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[1] Letter from F. H. Metcalf, Holyoke, Mass., 1890.

[2] Birds in the Bush, p. 220, 1885.

DICKCISSEL.

(*Spiza americana.*)

The dickcissel (see fig. 18) formerly raised its broods over a considerable portion of the United States east of the Rocky Mountains; but two or three decades ago it abandoned the Eastern States and now rarely breeds east of the Allegheny Mountains. In autumn it migrates to Central and South America. In some localities it is known as the little meadowlark, because its coloring is like that of the meadowlark, even to the black locket on the breast of brilliant yellow. Most sparrows are gregarious, but dickcissels move about in pairs or little family groups. In many places they are so numerous that a score of individuals may be found in every hayfield and meadow; and the species is as characteristic of such localities as the

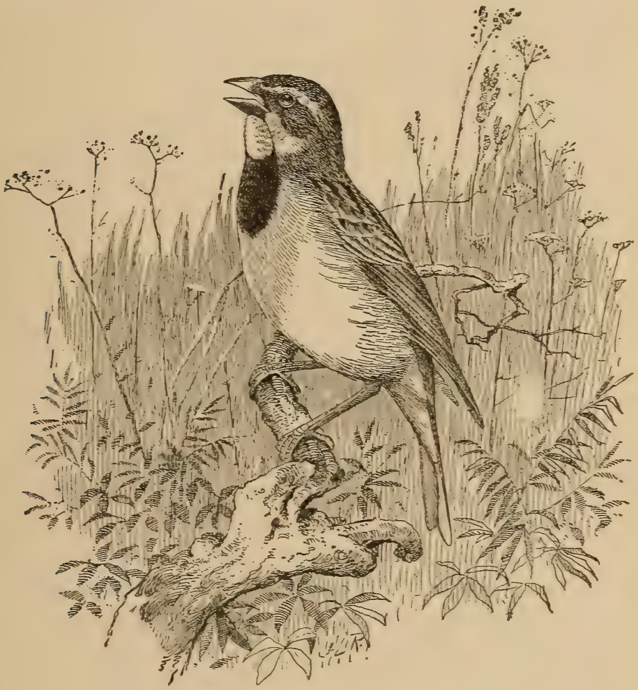

Fig. 18.—Dickcissel (*Spiza americana*).

robin is of the New England lawn, or the mocking bird of the Florida plantation. The song consists of a series of monotonous insect notes, repeated insistently from early morn till late afternoon, resembling somewhat the heat-suggestive tones of the grasshopper. The nest is placed on the ground like those of many of the sparrows, but the eggs are wholly unlike most sparrow eggs; they are pale blue, and might easily be mistaken for those of the bluebird.

In food habits the dickcissel is particularly interesting. One hundred and fifty-two stomachs have been examined, collected, however, only during the somewhat limited period from May to August. The winter food is, therefore, not shown by these examinations, but Nehrling states that during that season the bird feeds on grass seed and weed seed.[1] Most of the stomachs examined in the laboratory were collected in Kansas, but some came from Minnesota, Wisconsin, and Texas. They contained animal matter to the extent of 70 percent (insects, with a few spiders) and vegetable matter to the extent of 30 percent, practically all seeds. The vegetable part of the food is probably not as creditable as it would have been had the stomachs been collected from more widely separated localities. Most of them were obtained by one collector in a certain part of Kansas where there were large millet fields, and naturally the birds helped themselves plentifully to this abundant supply of food. In the stomachs collected during August, more than a tenth of the food was millet. In sections where millet is not grown, however, or where it is sown and covered well, the dickcissel might prove very valuable in feeding on the seeds of pigeon-grass; for in the stomachs examined, the seeds of millet, pigeon-grass, and closely related species formed almost the whole vegetable food. Some species of panicum were slightly represented.

The dickcissel, like most other fringilline birds, eats grain, but its offenses in this way are trifling; 3 percent of the food contained in the stomachs collected in July was composed of oats, but this was the only grain (except millet) found in any of the stomachs examined. The autumn and winter fare is probably composed chiefly of such grass and weed seeds as are usually eaten by sparrows.

But it is the insect food that is of especial interest. This constitutes 68 percent of the diet from May to August, and is made up as follows: Diptera and Hemiptera, 1 percent; Hymenoptera, 2 percent; Lepidoptera, 8 percent; Coleoptera, 15 percent; and Orthoptera, 41 percent. The Hymenoptera are almost entirely useful species; ants were found in 3 of the 152 stomachs examined, a small quantity compared with the great numbers eaten by some of the sparrows, notably the white-crowned, the white-throated, and the savanna. The Diptera are all obscure forms, except some robber-flies that one bird had fed on. The Hemiptera include true bugs of both plant-feeding and predaceous habits. The lepidopterous element, which is exceedingly small in comparison with that of many other species, is composed of smooth caterpillars of the families Geometridæ and Noctuidæ, except that one bird, contrary to the habits of most species, had fed on a black caterpillar beset with bristling hairs. Moths are also preyed on, and from information obtained through experiments (see p. 48), it is highly probable that, as seems to be the case with the sharp-tailed sparrow and a number of others, the smaller dull-colored species, popularly known as millers, are snapped up whenever an opportunity offers.

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[1] Our Native Birds of Song and Beauty, Vol. II, p. 231, 1896.

The Coleoptera entering into the food comprise ground-beetles, including some of the very beneficial sharp-jawed species, 1 percent; leaf-beetles, mostly dark, obscure species, 1 percent; weevils (Rhynchophora), largely *Sitones* and species of similar habits, 3 percent; little dung-beetles (Scarabæidæ and Histeridæ), 4 percent; and click-beetles and small long-horned beetles, taken together, 2 percent.

But it is as a destroyer of grasshoppers that the dickcissel excels. If it ate twice the quantity of useful insects and grain and destroyed no weed seed at all, it would still be a useful species because of the enormous number of grasshoppers and crickets it consumes. From June to August, inclusive, half of its diet consists of these destructive insects. It feeds eagerly on short-horned grasshoppers (Acrididæ), long-horned grasshoppers (Locustidæ), and crickets (Gryllidæ). The stomachs examined contained more crickets and long-horned grasshoppers than those of any other bird whose food habits have yet been investigated by this Department. The short-horned grasshoppers eaten included such forms as are generally found in stomachs of birds, the red-legged locust (*Melanoplus femur-rubrum*) and the Rocky Mountain locust (*Melanoplus spretus*) as usual, being most common. During the invasion of the last-named species, Professor Aughey examined some stomachs of the dickcissel, and found in each the remains of these pests, one alone containing twenty-seven.[1]

The large consumption of Orthoptera seems odd when one bears in mind the statement of Wallace that "The whole order of Orthoptera, grasshoppers, locusts, crickets, etc., are protected by their colors harmonizing with that of the vegetation or the soil on which they live. * * * We need not adduce any more examples to show how important are the details of form and of coloring in animals, and that their very existence may often depend upon their being by these means concealed from their enemies."[2] But that birds are sharp-eyed enough to seek out a great many Orthoptera, is unmistakably shown by the food of the dickcissel, the grasshopper sparrow, the lark sparrow, and many other species.

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[1] First Ann. Report U. S. Entomological Commission, App. II, p. 32, 1878.

[2] Natural Selection, p. 63, 1870.

About 2 percent of the food consists of such invertebrates as spiders and some few snails. The spiders belong to such terrestrial forms as the Lycosidæ and other ground-runners. There is, however, one notable exception in the case of a brood of nestlings. These were fed on a nonterrestrial spider (*Argiope*), a large, venomous-looking (though harmless) object as it rests in its web, resplendent with glossy black and brilliant yellow. Its gaudy color is supposed to be a protective device against birds.

From the limited investigations thus far made, the dickcissel, like the lark sparrow, vesper sparrow, and grasshopper sparrow, proves to be a most useful insect destroyer, whose services to the farmer are important. It will be found especially helpful in keeping down grasshoppers, which always threaten to become over-abundant and cause great destruction among the crops.

ENGLISH SPARROW.

(*Passer domesticus.*)

The English sparrow, or, more properly speaking, the house sparrow of Europe and Asia (see fig. 19), was introduced into the United States about 1850 and has increased and spread until now it is one of the most abundant birds east of the Mississippi River. It does not, however, occur in the lower part of Florida and certain parts of Mississippi and Louisiana, nor in some portions of Maine, Minnesota, and North Dakota. West of the Mississippi River its range forms a tongue-like area extending to the base of the Rocky Mountains in Colorado, and includes Missouri, Kansas, Arkansas, Indian Territory, and parts of South Dakota, Texas, Oklahoma, and Nebraska. It is also found in isolated localities west of the Rocky Mountains, principally about Great Salt Lake, San Francisco Bay, near Portland, Oreg., and on Puget Sound, Washington. In Canada it is established to a greater or lesser degree in all the eastern provinces. It has recently penetrated to Manitoba, but has not yet otherwise secured a foothold to the north and west of

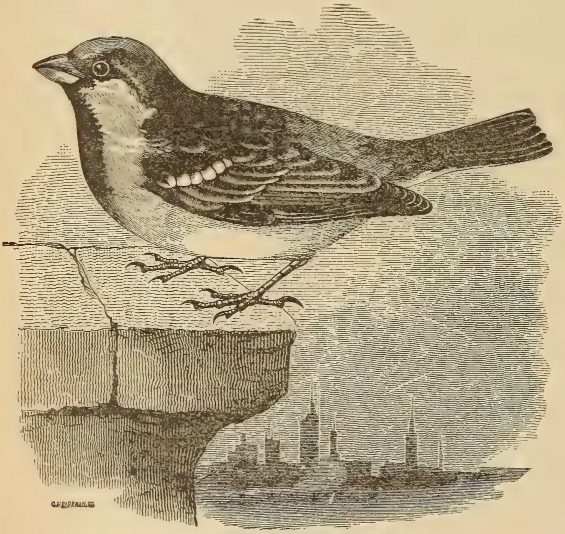
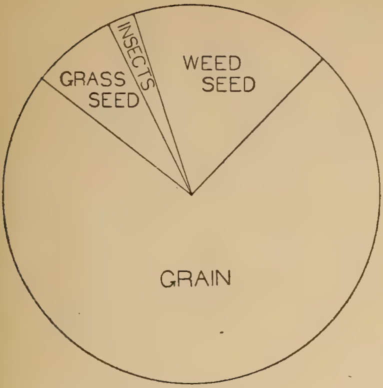
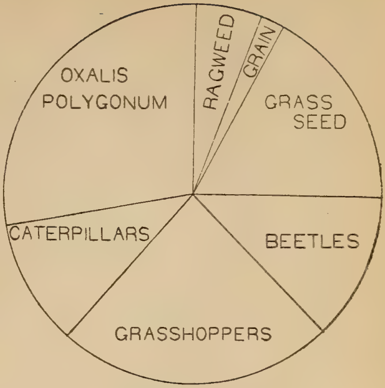


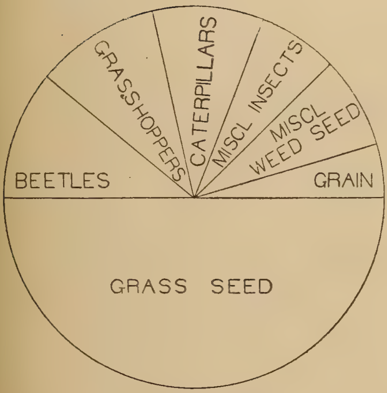
FIG. 19.—English sparrow.



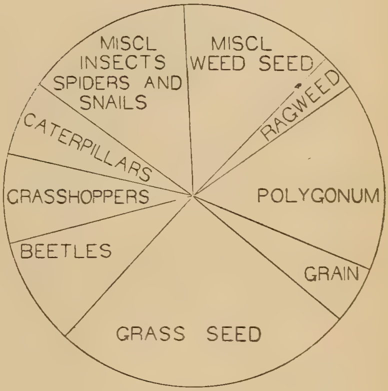
1. English sparrow.



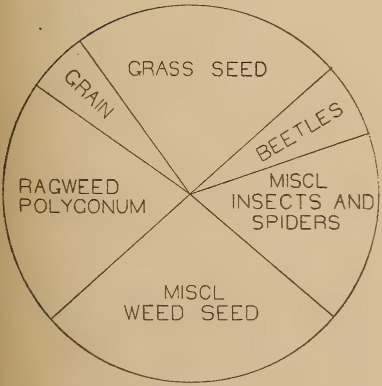
2. Grasshopper sparrow.



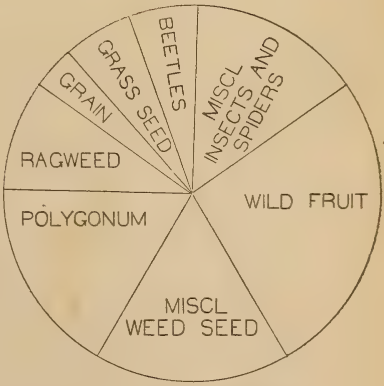
3. Chipping sparrow.



4. Song sparrow.



5. Junco.



6. White-throated sparrow.

Diagram showing Proportions of Food of Six Sparrows.

Ontario. Throughout its range it abounds chiefly in towns and villages, along roads, and about farms, and is not found in mountainous or forested districts.

The relation of the bird to man was investigated by the Department of Agriculture, and the results were published in 1889.[1] This investigation, which included extended field observation and the examination of more than 600 stomachs, showed the species to be a serious pest. Since the appearance of this publication 132 additional stomachs have been examined, and a special study has been made of the food of the young. For the latter purpose 50 birds from 3 days to 3 weeks old were collected during the last of June and the first of July, 1899, from a farming region in Virginia opposite Washington, D. C.

The 82 stomachs of adults were collected throughout the year in rural localities in Maryland, Michigan, New York, Pennsylvania, Ohio, Indiana, and Kansas. Animal matter, practically all insects, constituted 2 percent of the food, and vegetable matter, almost entirely seeds, 98 percent. Insects were taken chiefly during May and June, when they composed 10 and 8 percent respectively of the month's food. Of the 98 percent constituting the vegetable food, 7 percent consisted of grass seed, largely of plants of the genera *Zizania* (wild rice), *Panicum*, and *Chætocloa*, and notably crab-grass and pigeon-grass, and 17 percent of various weeds not belonging to the grass family. The grass and weed seeds taken are not noticeably different from those usually eaten by native sparrows. But what especially differentiates the vegetable food from that of all other sparrows is the large proportion of grain consumed, which formed 74 per cent of the entire food of the year and 90 percent of that of the period from June to August.

The examination of the contents of the stomachs of the 50 nestlings made an unfavorable showing for the species. It was found that instead of being exclusively insectivorous, like the young of all the native sparrows so far as known, the young English sparrows had taken 35 percent vegetable food, 2 percent being weed seed and 33 percent grain. The animal food was made up entirely of insects, and these were chiefly injurious. One percent of the food consisted of bugs, 3 percent of ants and other Hymenoptera, 4 percent of Lepidoptera, 8 percent of beetles, and 49 percent of grasshoppers. Three-fourths of the beetles were weevils, and practically all the grasshoppers were the short-horned (Acrididæ), the greater part of which belonged to the species *Melanoplus atlantis* and *Melanoplus femur-rubrum*. The destruction of these harmful insects is, of course, a service to agriculture; but it must be remembered that all the food of the nestlings of other sparrows consists of insects just as injurious, while one-third of the food of English sparrows is composed of grain.

As an insect destroyer the English sparrow does its best service by destroying grasshoppers, principally in feeding nestlings, nearly half of the food of which, as shown, was found to consist of grasshoppers of the genus *Melanoplus*. Other Orthoptera are eaten to a slight extent. It is a common sight along roads to see the birds pursuing and capturing the large dust-colored grasshopper (*Dissosteira carolina*) which shows yellow underwings when it flies. Long-horned grasshoppers (*Locustidæ*), small grasshoppers of the genus *Tettix*, and, in one instance at least, the mole cricket (*Gryllotalpa*) were included in the orthopterous food found in their stomachs. The species of Lepidoptera preyed on are important pests. Whenever there is an uprising of army worms, the English sparrows feast on the abundant supply. They have been observed catching the moth also of the army worm. During spring and early summer, they remove many cutworms from lawns and, to a certain extent, feed on hairless caterpillars of shade trees. Occasionally they destroy a few hairy caterpillars: they eat the fall webworms and tussock-moth caterpillars, and sometimes feed on the moths and egg clusters of the latter species; they are included by Forbush among the birds seen to feed on the gipsy moth,[1] and they have been observed by Weed preying on the moths of the forest-tent caterpillar.[2] But that they do not habitually eat hairy caterpillars and should not be expected to act as a potent check upon such insects is evidenced by the fact that only 2 of nearly 700 stomachs examined contained hairy caterpillars.

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[1] The English Sparrow in North America, Bull. 1, Div. Ornithology and Mammalogy, 1889.

The English sparrow feeds less on useful predaceous beetles than any other insect-eating bird investigated by the Department. Only three of the stomachs examined contained insects of this class. In one case a ground-beetle, and in the other two cases tiger-beetles were eaten. No dragon-flies were found in the stomachs examined, but an hour's field observation near the Department brought to light the fact that these useful insects, the natural enemies of mosquitoes, are relished by English sparrows. All about a pond at the base of the Washington Monument on the morning of May 21, 1898, the nymphs of a large species of dragon-fly (*Libellula pulchella*), which had emerged from the water and crawled up the stalks of yellow iris and other vegetation at the water's edge, were splitting open and the soft adults were tumbling out. The English sparrows, taking advantage of the helpless condition of these newly transformed insects, seized them and flew to the pavement above the pond, and, after some preliminary pecking, ate them, or carried them to their young. Along 200 feet of this pavement were 100 dragon-fly wings. Of the useful Hymenoptera, the English sparrow destroys few braconids or ichneumonids, but consumes a comparatively large number of scoliids (*Typhia* and *Myzine*). It has not been known to molest the common honey bee, but on the contrary if offered these insects in captivity, it invariably refuses them. It has nevertheless been observed feeding on a small species of wild bee (*Halictus* sp.). Ants are quite frequently eaten. English sparrows, feeding on the ground, have often been seen to spring into the air and catch a flying ant, *Lasius* or *Tetramorium.* They also feed on *Monomorium pharaonis.*

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[1] The Gipsy Moth, p. 208, 1896.

[2] Bull. No. 75, N. H. Coll. Agr. Expt. Sta., 1900.

The beetle element of their food is of varied importance. They prey on the harmless dung-beetles (*Aphodius*) that are selected by native sparrows and many other species of birds. They also eat May-beetles (*Lachnosterna*)—for the most part too hard-shelled for many of the native sparrows—which are very injurious to crops, but which should probably be counted as neutral in this case, since most of those eaten have been maimed or killed by arc lights along city streets. The destruction of weevils is productive of more benefit. These insects abound in city parks from which the English sparrows obtain much of their food, and where they destroy many of the pests, especially while feeding nestlings. The forms eaten include *Baris*, *Centrinus*, *Phytonomus punctatus*, *Sphenophorus parvulus*, and various species of *Sitones.* Unimportant leaf-beetles, such as *Colaspis brunnea* and *Chætocnema denticulata*, are eaten, but the more injurious kinds are not touched.

Hemiptera, both Heteroptera (soldier bugs of the genera *Euschistus* and *Podisus*) and Homoptera (leap-hoppers, plant-lice, scale insects, and cicadas), as well as Diptera (*Muscidæ* and *Tipulidæ*), are sometimes included in the sparrow's diet. Dr. L. O. Howard has found the bird feeding on the maple scale (*Pulvinaria innumerabilis*).[1] Mr. E. H. Forbush has observed it eating the eggs of the white birch plant-louse (1,478 eggs were found in one stomach), and also those of the larch plant-louse (*Chermes*).[2]

As regards the destruction of weeds, English sparrows would be far more effective in rural districts if they flew out into the fields to feed; but instead of this they limit their weed-seed eating largely to the barnyard and the immediate vicinity of buildings. Thus, during November, 1899, 50 English sparrows were seen eating seeds from a wagonful of ragweed which had been driven up to a barn. These same birds would not have flown into the field where the ragweed grew, because they preferred to stay near the barn and steal grain; but when a quantity of such food was brought to them they did not refuse it.

As has already been shown (see p. 26), English sparrows do effective work in destroying seeds of weeds in the public parks of cities and towns. This food does not differ materially in character from that of the native sparrows, consisting of such kinds as pigeon-grass (*Chætochloa glauca* and *C. viridis*), yard-grass, Bermuda or wire-grass, lamb's-quarters, crab-grass, sweet clover (*Melilotus alba*), knotweed, field mustard, black bindweed, smartweed, climbing false buckwheat, dandelion, sunflower (*Helianthus annuus*), and ragweed.

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[1] Bull. 22, Div. Entomology, New Series, p. 12, 1900.

[2] Mass. Crop Report Bull. 3, p. 31, July, 1900.

In cities the grain that enters into their food is composed so largely of the semi-digested oats in horse droppings in the streets that it should not be allowed to weigh against the species appreciably in estimating the character of its food habits. But in rural districts it is largely drawn from man's supply. There is scarcely a grain crop which English sparrows do not habitually injure. They pillage the fields by thousands and cause great damage.

It appears, therefore, that there is little to be said in favor of the English sparrow. Its insectivorous habits are creditable as far as they go, but they are insignificant because the diet is almost exclusively vegetable; and while it is in the vegetable fare that the value of most sparrows consists, yet in the case of the English sparrow the damage to grain far overbalances the benefit of weed-seed destruction. Adding to this the injury it causes to buildings and statues in cities, there is no escape from the conclusion that the bird is a serious pest the extermination of which would be an unmixed blessing.

The obnoxious character of the English sparrow is widely recognized, and numerous attempts, by means of bounties and otherwise, have been made to rid the country of its presence, but with little success. The wariness of the bird, its hardihood, and its prodigious fecundity have thus far rendered all such efforts futile.

In the city of Boston, during 1899, a crusade was inaugurated through the efforts of the American Society of Bird Restorers. From March 13 to April 5, six men were employed in the Common and Public Garden destroying the nests and eggs. Five thousand nesting holes were plugged up, 4,000 nests destroyed, and 1,000 eggs broken, but no birds were killed. It is claimed that nearly half of the sparrows which normally breed on the Common and Public Garden were driven away. In May only 250 to 300 pairs of sparrows were found, while the number of pairs counted in the parks before the sparrow war began amounted to 500.

Much is always to be learned from an experiment of this kind, and other cities should profit by Boston's experience. There is reason to believe, however, that the present rapid supplanting of horse power by electricity will, by reducing the food supply of the birds, do more toward diminishing their numbers in the city parks than any plan for restricting their reproduction.

The amount of expense that may profitably be incurred in combating the sparrow will depend on circumstances, as in the case of the house rat and mouse; but it should be borne in mind that the bounty system has proved to be only an extravagant failure.

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BULLETIN No. 16
U. S. DEPARTMENT OF AGRICULTURE
DIVISION OF BIOLOGICAL SURVEY

DIGEST OF GAME LAWS FOR 1901

BY

T. S. PALMER and H. W. OLDS
ASSISTANTS, BIOLOGICAL SURVEY

PREPARED UNDER THE DIRECTION OF
Dr. C. HART MERRIAM
CHIEF OF BIOLOGICAL SURVEY

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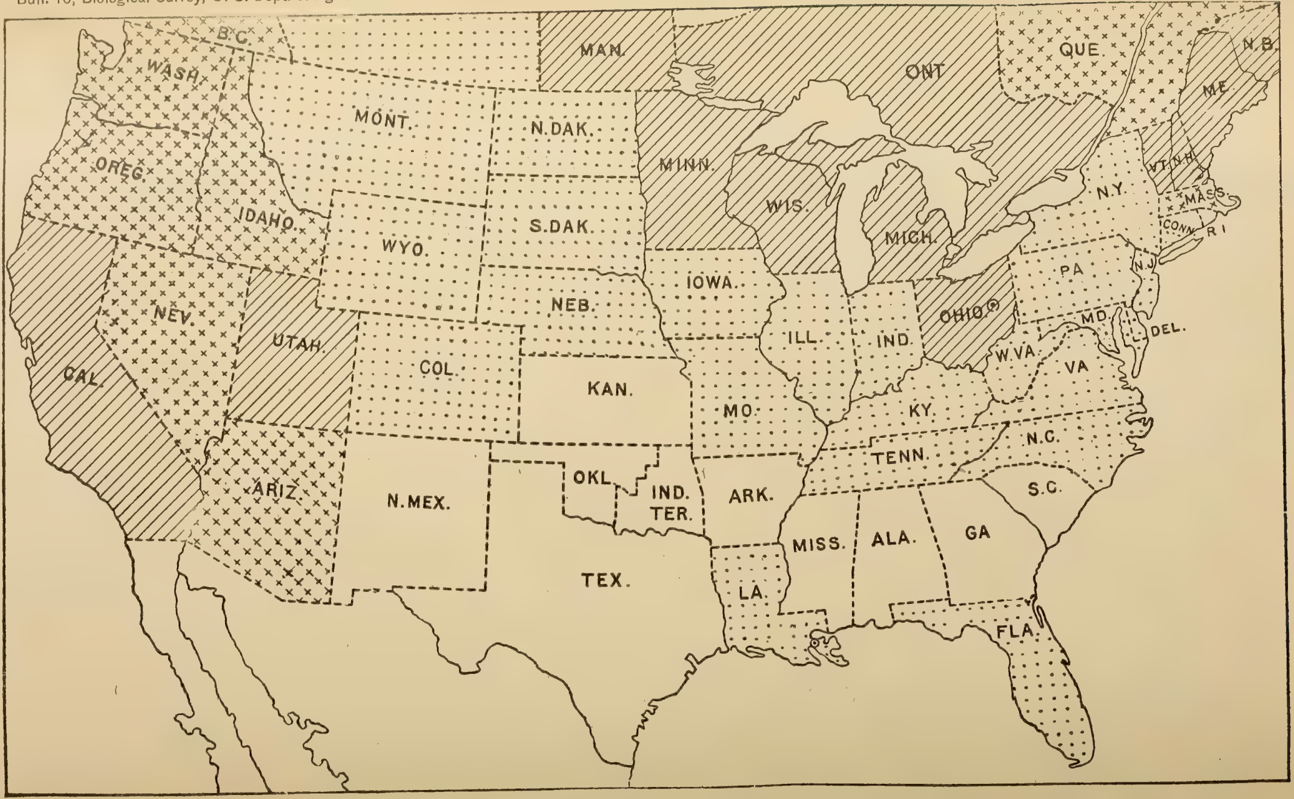
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MAP ILLUSTRATING THE NEED OF GREATER PROTECTION FOR WILD DUCKS.

Blank areas indicate no protection; dotted areas, protection chiefly between April and September, when most of the ducks have gone north to breed; crosses, partial protection during spring migration, close seasons beginning in March; and ruled areas, complete protection during spring migration, close seasons beginning on or before February 1. Under ideal laws the entire map would be ruled.

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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Division of Biological Survey,
Washington, D. C., August 9, 1901.

Sir: I have the honor to submit herewith, and to recommend for publication, as Bulletin No. 16 of the Biological Survey, a report entitled 'Digest of Game Laws for 1901,' by T. S. Palmer and H. W. Olds. The object of this report is to present in convenient form the provisions of the laws now in force, including the amendments enacted during the present year. In view of the fact that the game season opens in several States on September 1, it is desirable that this bulletin be published and distributed as promptly as possible.

Respectfully,

T. S. Palmer,
Acting Chief, Biological Survey.

Hon. James Wilson,
Secretary of Agriculture.

PREFACE.

The act of Congress approved May 25, 1900, requires the Secretary of Agriculture to collect and publish, from time to time, useful information concerning the preservation of game and other birds. In accordance with this provision it has been deemed important to publish a digest of the game laws embodying the numerous changes made during the present year.

In the spring of 1901 legislative sessions were held in about forty States and Territories, and in nearly all amendments to the game laws were enacted. Numerous changes were made in the old laws, amounting to 200 or more in the matter of close seasons alone. This multitude of amendments has necessitated a thorough revision of the bulletin issued in 1900, entitled 'Laws Regulating the Transportation and Sale of Game,' and the issue of a new report has afforded an opportunity for making certain important additions, including a chapter on Federal game laws, a digest of the county laws of Virginia, and incorporation of the provisions of the Canadian laws. Experience has shown that while much stress is laid on close seasons, comparatively little importance is attached to violations of other provisions of game laws. It does not seem to be generally recognized that killing game by illegal methods, in excess of the number allowed by law, or for unlawful purposes, is as serious an offense as killing game out of season. In order to emphasize this point, a special chapter on methods has been introduced and some of the other sections in the former report have been rearranged. As the bulletin now stands it is practically a complete digest of existing Federal, State, and Provincial laws relating to the capture, shipment, and sale of game. It has been possible, however, to give this information only in the most condensed form. Attention is called to the tables at the end of the bulletin in which the close seasons under State and Provincial laws for all the more important game of the United States and Canada are brought together for ready reference, and similarly close seasons for the principal game protected in Maryland, Virginia, and North Carolina, under county laws. It has been possible to give extracts from the laws only in the cases of sections relating to shipment and sale. All provisions relating to enforcement of laws, appointment and duties of game commissions and wardens, procedure, search, and disposition of confiscated game have been necessarily omitted. Detailed information on these and other points must be sought in unofficial compilations of game laws, in the compilations issued by State authorities, or in the statutes themselves.

In the preparation of the bulletin much assistance has been derived from the valuable compendium published under the title of 'Game Laws in Brief,' which, however, is designed primarily for the use of sportsmen, and omits penalties and frequently the provisions regarding sale. The difficulties of the work have also been materially lessened by the aid rendered by State officers and private individuals, who, with uniform courtesy, have furnished copies of the laws or other information.

It should be stated that many of the statutes were not accessible until after July 1, and even at the date of going to press it has been impracticable to consult the county laws passed this year in Tennessee, or the amendments enacted in Delaware. The time for preparation of the bulletin has thus been short, and while great care has been taken in compilation, errors may have crept in, which, under other circumstances, might easily have been eliminated. Sportsmen and others, therefore, are requested to report promptly any inaccuracies or omissions that may be detected.

T. S. Palmer.
H. W. Olds.

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DIGEST OF GAME LAWS FOR 1901.[1]

I. GENERAL DISCUSSION OF GAME LAWS.

INTRODUCTION.

The game laws now in force in the United States are of two kinds, Federal and State. Federal laws regulate interstate commerce in, and importation of game; the preservation of game in Alaska, the Indian Territory, and the District of Columbia, and on Government reservations. State laws regulate the capture, shipment, and sale of game within State jurisdictions. Canadian laws, like those of the United States, may also be divided into General laws, comprising chiefly regulations concerning the export of game; and Provincial laws, corresponding to State laws, which govern the capture, shipment, and sale of game. In some States certain counties have special statutes or are partially or entirely exempt from the operation of the general game laws. In the four States of Maryland, Virginia, North Carolina, and Tennessee, where local statutes are especially popular, there are probably more game laws for the three hundred or more counties than in all the rest of the United States. It should be noted, however, that these local laws are enacted by the States and not by the counties themselves. State legislatures are jealous of their rights in such matters, and, except in Mississippi, seldom delegate even the fixing of game seasons to county boards of supervisors. In many instances these laws do not conform to those of adjoining States or counties, and even in so fundamental a matter as the definition of game there is a noticeable lack of agreement.

DEFINITIONS OF GAME.

In Bouvier's Law Dictionary game is defined as "Birds and beasts of a wild nature obtained by fowling and hunting;" in the Code of Mississippi as "all kinds of animals and birds found in the state of nature commonly so-called." Both these statements are too general to meet the requirements of modern conditions. The laws of Michigan, British Columbia, and New Brunswick go to the other extreme and define game birds as "any birds protected by this act," and those of Nova Scotia as certain enumerated birds and animals. Such definitions are open to the objections that they may include many species which are not legitimate game, that they may not include one-half or even one-fourth of the kinds of game actually found within the State, and furthermore that they are subject to constant change with each new amendment as species are added to or stricken from the list.[1] The groups of animals and birds which may be considered legitimate game are well marked and comparatively few in number and may easily be so defined as to avoid the objections just mentioned.

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[1] The present report deals only with laws concerning animals and birds which are properly game. Legislation regarding nongame birds will be found in Bull. No. 12 of the Biological Survey.

The game of North America is practically limited to four groups of mammals and four of birds. The game mammals are (1) 'big game' or ruminants and peccaries (Ungulata); (2) bears and raccoons[2] (Carnivora); (3) rabbits and squirrels (Rodentia); and (4) opossums[2] (Marsupialia). Game birds, as defined by the American Ornithologists' Union, comprise (1) Anatidæ, commonly known as swans, geese, brant, and ducks; (2) Rallidæ, including rails, coots, mud hens, and gallinules; (3) Limicolæ, or shore birds, comprising plover, snipe, woodcock, sandpipers, and curlew; and (4) Gallinæ, including wild turkeys, grouse, prairie chickens, pheasants, partridges, and quail. Certain mammals and birds are sometimes classed as game which, for various reasons, might preferably be otherwise regarded. Among such mammals may be mentioned ground squirrels, muskrats, and woodchucks; and among birds, cranes, wild pigeons, doves, flickers, night hawks or bull bats, meadowlarks, reedbirds, blackbirds, and robins. Ground squirrels, muskrats, and woodchucks are not held in high estimation for the table, nor are they usually hunted for sport. Cranes, pigeons, and doves are ordinarily considered legitimate game, but are now so rare that in many States they have been practically removed from the game list. Flickers, night hawks, meadowlarks, blackbirds,[3] and robins are insectivorous, and although considered good eating, are far too valuable to be killed for sport or market. Reedbirds or bobolinks, while regarded as pests in the South and highly esteemed as song birds in the North, are treated as game in five States along the middle Atlantic coast, where they are neither particularly beneficial nor injurious. They may, perhaps, be properly added to the list in those States.

---

[1] A good illustration is the case of New Jersey. Deer are omitted from the list of game in the act of 1901, but are still protected under the clause 'other game animals.' Had New Jersey defined game as 'animals and birds mentioned in this act,' deer would now have no protection.

[2] These animals are seldom mentioned in game laws. As a rule, bears are accorded no protection, though in Quebec they have a close season like other game.

[3] In certain localities where blackbirds congregate in such numbers as to damage crops, it is probably best to deprive them, for the present at least, of all protection.

A good beginning has already been made toward securing the general adoption of a uniform definition of game birds. The definition proposed by the American Ornithologists' Union, which restricts the term to four easily recognized groups, has now been accepted by the District of Columbia and ten States—Maine, New Hampshire, Connecticut, New Jersey, Delaware, Florida, Indiana, Illinois, Wisconsin, and Wyoming. It has been slightly modified by adding reedbirds and blackbirds to the list of species in the District of Columbia, reedbirds to the New Jersey list, and doves to the Florida and Illinois lists.

HISTORY.

Laws relating to game in America date back almost to the first settlement of the colonies. One of the earliest is found in the Massachusetts Bay colonial ordinance of 1641, as amended in 1647, which provides that "for great ponds lying in common, though within the bounds of some town, it shall be free for any man to fish and fowl there, and may pass and repass on foot through any man's property for that end, so that they trespass not upon any man's corn or meadow." This law was in force in the whole Colony of Massachusetts, which at that time included much of the territory now covered by the State of Maine. It has been the basis of several decisions rendered in recent years by the Maine courts, which have held that anyone may go to great ponds on foot through uninclosed woodlands, but may not cross tillage or mowing land; that a great pond is one containing more than 10 acres,[1] and that such ponds belong to the State.[2] As early as 1699 Virginia passed an act (II William III) prohibiting the killing of deer between January and July under a penalty of 500 pounds of tobacco. Maryland followed in 1730 with a provision prohibiting "any person (Indians in amity with us excepted), between January first and July last, to kill any deer under the penalty of 400 pounds of tobacco;" and South Carolina, in 1769, prohibited killing of deer during the same period under a penalty of 40 shillings proclamation money. Both the Maryland and South Carolina acts prohibited night hunting with fire light, as did also the early statutes of Mississippi Territory.[3] The earliest game laws in Kentucky were passed in 1775, and their author was Daniel Boone; the earliest in New York in 1791.[3] The New York law fixed a penalty of 20 shillings for killing heath hen, partridge, quail, or woodcock on Long Island or in the city and county of New York.

In the nineteenth century game laws multiplied rapidly. In 1864 they were in force in eighteen States and the District of Columbia, in 1874 in twenty-four, and during the last quarter of the century they were extended to practically every State and Territory and to most of the Provinces of Canada. The simple provisions of the earlier statutes are no longer sufficient, and the modern game laws of some of the States are really codes covering such subjects as seasons, methods of capturing game of all kinds, conditions for shipping to market, sale, permits to collect scientific specimens, taking, keeping, and shipping birds and animals for propagation, employment of guides, duties of game commissioners and wardens, besides various provisions necessary for enforcement, such as search, seizure, and disposition of game. These laws are subject to such frequent change that in certain States scarcely a session of the legislature passes without the enactment of amendments of some kind. In 1879 New York adopted a complete and carefully prepared statute which remained in force for fifteen years or more, but by 1895 no less than 214 amendments or special acts had been passed, and the original law was greatly obscured.[1]

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[1] Auburn *v.* Water Power Co., 90 Me. 576.

[2] 86 Me. 319.

[3] Whitehead, 'Game Laws' in Hunting in Many Lands, p. 364, 1895.

Without attempting to follow the development of game legislation in detail, the growth of game laws may be illustrated by briefly sketching the changes in those of Maine, now one of the foremost States in legislation of this kind. The first State law of Maine was apparently that of March 16, 1830, which prohibited killing deer and moose between January 1 and September 1, under a penalty of $15. This season was subsequently modified at intervals (see below), but the list of protected game was not extended until 1863, when a close season was provided for quail between March 1 and September 1, and for woodcock between March 1 and July 4.[2] In 1866 protection was given fur-bearing animals, including mink, beaver, sable, fisher, otter, and muskrats. In 1870 protection was accorded caribou, and the bird list was extended by the addition of grouse or partridges, snipe, and a few insectivorous birds, such as larks, robins, swallows, and sparrows. The capture of ducks except with firearms was prohibited. In 1879 plover were added to the game list and a close season (May 1 to September 1), which remained in force for twenty years, was established for wood ducks, dusky or black ducks, and sea ducks. In 1883 the non-game bird list was extended to include orioles or other insectivorous birds, and finally, in 1901, was made to include all wild birds other than game, except crows, hawks, owls, and English sparrows.

As early as 1852 it became necessary to have special officers to enforce the game laws, and county moose wardens were appointed, but in the following year these were replaced by county and town moose wardens. In 1880 the board of commissioners of inland fisheries and game was established, now consisting of three commissioners.

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[1] Whitehead, l. c., p. 373.

[2] It is interesting to observe that this early law recognized the importance of making no distinction between State and imported birds and prohibited buying or selling birds taken in Maine or elsewhere.

Thus, by gradual stages, from the simple prohibition of 1830 against killing deer and moose, has been developed the comprehensive law in force to-day protecting all the big game and nearly all the birds found within the State, and prescribing the times and methods for their capture. The close seasons have undergone numerous changes during the seventy years, but those for moose and deer are much the same as they were originally, having merely lengthened a little at each end. As a matter of interest, the different close seasons for big game from 1830 to date are here tabulated:

Close seasons for Big Game in Maine.

Year.	Deer.	Moose.	Caribou.
1830	Jan. 1–Sept. 1	Jan. 1–Sept. 1	
1841	July 1–Nov. 1	July 1–Nov. 1	
1848	Mar. 1–July 1	Mar. 1–July 1	
1853	Jan. 15–Sept. 1	Apr. 15–Oct. 1	
1855	(No change)	Mar. 15–Oct. 1	
1870	Feb. 1–Oct. 1	Feb. 1–Oct. 1	Feb. 1–Oct. 1.
1883	Jan. 1–Oct. 1	Jan. 1–Oct. 1	Jan. 1–Oct. 1.
1899	Dec. 15–Oct. 1	Dec. 1–Oct. 15	Protected to 1905.

LEGISLATION OF 1901.

The opening year of the new century has witnessed an unprecedented interest in game protection. Nearly four-fifths of the States and Territories have enacted some amendments to their game laws. These amendments vary from a slight change in the Delaware law regarding close seasons to the adoption of a general game law or code in Arizona, California, Connecticut, Indiana, Michigan, Missouri, Nebraska, Nevada, New Hampshire, and New Jersey. Changes in dates for opening or closing the seasons have been very general, but restrictions on methods of capture, on sale, shipment, and storage, have also been numerous. In many instances the laws have necessarily become more complex, but there has been a strong tendency toward extending protection to more kinds of game, shortening the seasons, limiting bags, and throwing greater restrictions about the trade in game. Nebraska and Missouri, which suffered severely from wholesale shipments of game last year, have joined the great majority of States in adopting stringent nonexport laws, leaving less than half a dozen States now without protection of this kind. (See Pl. VIII.) Other States, notably Indiana, Montana, Nebraska, Pennsylvania, and Washington, have restricted hunting by requiring licenses of nonresident hunters, a common method, particularly in the Middle West, for providing a game protection fund. Nebraska, South Dakota, and Washington have followed the example of Michigan, Minnesota, North Dakota, and Wisconsin in requiring residents as well as nonresidents to obtain licenses, and Oregon now licenses nonresident market hunters. All the Northern States from the Alleghenies to the Pacific with three exceptions now require nonresident hunters to secure licenses at a cost of $10 to $40. (See pp. 46–49.)

Perhaps the most hopeful sign of the times is the general recognition of the principle that game preservation is a national rather than a local question. The progress made in many States is the outcome of well-directed efforts toward the attainment of a common definite object, rather than the passage of purely local measures. Organized effort has accomplished more this year than ever before. The American Ornithologists' Union, interested especially in the preservation of nongame birds, has secured the enactment of a practically uniform law in eight States and the District of Columbia, and incidentally the adoption of a uniform definition of game birds. The League of American Sportsmen has given attention especially to securing better protection for big game and wild turkeys, and its efforts have contributed to the passage of bills providing a close season of three to ten years for antelope in six States, for elk in five States, and for mountain sheep and wild turkeys in two States. It has supported the principle advocated by several leading sportsmen's journals that protection can best be secured by restricting the sale of game and limiting the amount of a day's or season's bag. The influence thus exerted, combined with the aid of various other game organizations, was largely instrumental in securing the passage of numerous laws embodying these features. The sale of all kinds of game has been prohibited by three States, and that of certain species by seven others. As a result of efforts in this direction, three kinds of game—antelope, elk, and prairie chickens—have been practically removed from the markets, except in States where their killing is still permitted. (See pp. 38, 54.)

Among the novel features of legislation may be mentioned a unique statute enacted in Maine to prevent criminal carelessness in hunting, with a view to decreasing the deplorable accidents which have occurred with such unnecessary frequency in the past few years. This law provides that "Whoever while on a hunting trip, or in pursuit of wild game or game birds, negligently or carelessly shoots and wounds or kills any human being shall be punished by imprisonment not exceeding ten years or by fine not exceeding $1,000."[1] Other new features include the requirement of Nevada that the game laws shall be read in the public schools at least twice during each year; various measures relative to game introduction; and provisions for establishing game preserves. Maine has adopted the precaution of requiring persons who wish to import live animals or birds to first secure a permit from the State authorities, in order that undesirable species may be prevented from gaining a foothold. New York has made provision for restocking the Adirondack region with moose, and has appropriated the sum of $5,000 for this purpose. Connecticut, in an 'Act concerning the establishment of State game preserves,'[1] has authorized the commissioners of fisheries and game, upon petition of five resident landowners of any town, to lease tracts of woodland suitable for propagation of game, for terms of twenty-five or fifty years, at an annual rental not to exceed $5 for each preserve.[2]

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[1] Public Laws 1901, chap. 263.

Washington has followed the initiative taken by Colorado in cooperating with the Federal authorities to secure better enforcement of the game laws on the forest reserves by making all forest rangers *ex officio* game wardens. Forest rangers in Colorado have been invested with the same authority as deputy wardens for two years, but this was done by a regulation of the State game commissioner[3] and not by a provision in the game law, as is the case in Washington. South Dakota has adopted a provision allowing only deputy game wardens to serve as guides.

Among the numerous changes it is but natural to find some examples of retrograde legislation, but these are partly due to errors of omission in the new laws, by which certain birds are deprived of the protection they formerly enjoyed. Arizona has failed to provide a season for killing doves, but has, however, prohibited their sale. Connecticut has extended the open season for rail from January 1 to April 1, apparently for the sake of conformity with the newly established season for plover and snipe, thus permitting sale, if not shooting, in the spring. Illinois, through an unfortunate omission, failed to provide any close season for quail, woodcock, or rail, but the sale of quail is still prohibited under the old law. Indiana and Kansas, which formerly protected doves at all times, have established open seasons from August 15 to January 1, and from July 15 to September 15, respectively. New Jersey has omitted deer,[4] and Oregon, snipe from the new laws. Rhode Island, in amending the duck season, has removed protection entirely from rail, snipe, plover, geese, and certain ducks, and has lengthened the open season for other ducks to April 1, thus permitting spring shooting.

On the whole, the legislation of 1901 is a distinct advance over that of any previous year, but much still remains to be done in the way of making proper provision for transportation of live game for propagation, in extending greater protection to shore birds, woodcock, and turkeys, which are becoming greatly diminished in numbers and are threatened with extermination in certain localities, and especially in protecting wild fowl during the spring when they are on the way to their breeding grounds. A comparison of Plates I and II will show that in the greater part of the United States ducks have very little protection. Many of the species breed in the far North and do not occur in the United States during summer. Yet nine States in the South and West accord wild fowl practically no protection, and a number of others have close seasons of only four or five months duration, chiefly during the time when the birds are absent from the State. On the other hand a few States realize the necessity for greater protection and are making strenuous efforts in this direction. During the present year Wisconsin has successfully maintained the anti-spring shooting law on its statute books and its example has been followed by Michigan, which has closed its season a full month earlier than before. Maine also has put an end to spring shooting of ducks. Including these, six border States and three provinces of Canada—Maine, New Hampshire, Vermont, Michigan, Wisconsin, Minnesota, New Brunswick, Ontario, and Manitoba—have now united in prohibiting spring duck shooting.

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[1] Public Acts 1901, chap. 65, pp. 1215–1217.

[2] A somewhat similar provision has been in force for several years in Ontario, by which the Lieutenant-Governor-in-Council is authorized to designate certain counties or portions of counties in which it is unlawful to hunt or kill deer at any time, thus in effect establishing deer preserves.

[3] Regulation No. 9, May 1, 1899. Division A, sec. 7, of the game law of 1899 provides that the commissioner shall have power to prescribe such regulations as may be required to carry out the true intent of the act.

[4] See footnote, p. 12.

Public sentiment against spring shooting is gradually gaining ground, but the States which have been able to crystallize this sentiment into law are still few in number. It seems difficult to make the public appreciate the fact that migratory game must receive at least as much protection as is accorded resident game if it is to be saved from extermination. Many persons who are strongly in favor of prohibiting spring shooting, and who appreciate the difficulty of passing such a law in their own State, have suggested a national law as the only solution of the question. This is impracticable, since the fixing of times and seasons for taking game is a matter solely within the jurisdiction of the States, a prerogative which they jealously guard, and one which both State and Federal courts recognize. Only five years ago the Supreme Court of the United States expressly declared that "the power of the State to control and regulate the taking of game can not be questioned."[1] The remedy lies in concerted action on the part of individuals and associations in neighboring States, all working for the attainment of a common object. In such a movement the Provinces of Canada have shown their willingness to join by making their laws conform in many respects to those of adjoining States.[2] The Province of Ontario has even gone so far as to provide in its game-protection act of 1900 that when any migra-

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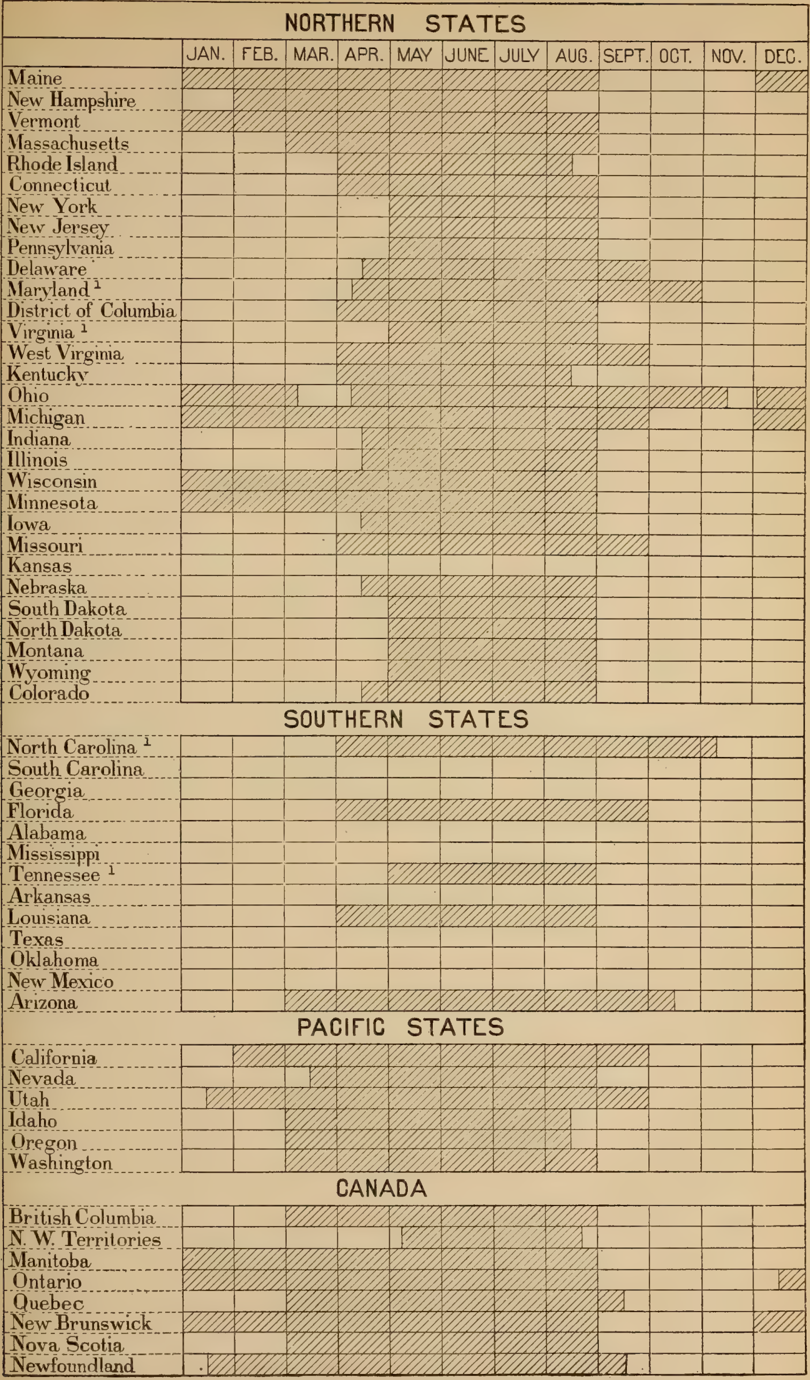
[1] Ward *v.* Race Horse, 163 U. S. 507.

[2] The recent steps toward uniformity in the laws of the border States and Provinces are doubtless largely due to the efforts of the North American Fish and Game Protective Association, which was organized January 30, 1900.



NORTHERN STATES	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Maine	▨	▨	▨	▨	▨	▨	▨	▨				▨
New Hampshire		▨	▨	▨	▨	▨	▨					
Vermont	▨	▨	▨	▨	▨	▨	▨	▨				
Massachusetts			▨	▨	▨	▨	▨	▨				
Rhode Island				▨	▨	▨	▨	▨				
Connecticut				▨	▨	▨	▨	▨				
New York					▨	▨	▨	▨				
New Jersey					▨	▨	▨	▨				
Pennsylvania					▨	▨	▨	▨				
Delaware				▨	▨	▨	▨	▨	▨			
Maryland[1]				▨	▨	▨	▨	▨	▨	▨		
District of Columbia				▨	▨	▨	▨	▨				
Virginia[1]					▨	▨	▨	▨				
West Virginia				▨	▨	▨	▨	▨	▨			
Kentucky				▨	▨	▨	▨	▨				
Ohio	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨
Michigan	▨	▨	▨	▨	▨	▨	▨	▨	▨			▨
Indiana				▨	▨	▨	▨	▨				
Illinois				▨	▨	▨	▨	▨				
Wisconsin	▨	▨	▨	▨	▨	▨	▨	▨				
Minnesota	▨	▨	▨	▨	▨	▨	▨	▨				
Iowa				▨	▨	▨	▨	▨				
Missouri				▨	▨	▨	▨	▨	▨			
Kansas												
Nebraska				▨	▨	▨	▨	▨				
South Dakota					▨	▨	▨	▨				
North Dakota					▨	▨	▨	▨				
Montana					▨	▨	▨	▨				
Wyoming					▨	▨	▨	▨				
Colorado				▨	▨	▨	▨	▨				
SOUTHERN STATES												
North Carolina[1]				▨	▨	▨	▨	▨	▨	▨	▨	
South Carolina												
Georgia												
Florida				▨	▨	▨	▨	▨	▨			
Alabama												
Mississippi												
Tennessee[1]					▨	▨	▨	▨				
Arkansas												
Louisiana				▨	▨	▨	▨	▨				
Texas												
Oklahoma												
New Mexico												
Arizona			▨	▨	▨	▨	▨	▨	▨	▨		
PACIFIC STATES												
California		▨	▨	▨	▨	▨	▨	▨	▨			
Nevada			▨	▨	▨	▨	▨	▨				
Utah	▨	▨	▨	▨	▨	▨	▨	▨	▨			
Idaho			▨	▨	▨	▨	▨	▨				
Oregon			▨	▨	▨	▨	▨	▨				
Washington			▨	▨	▨	▨	▨	▨				
CANADA												
British Columbia			▨	▨	▨	▨	▨	▨				
N. W. Territories					▨	▨	▨	▨				
Manitoba	▨	▨	▨	▨	▨	▨	▨	▨				
Ontario	▨	▨	▨	▨	▨	▨	▨	▨				▨
Quebec			▨	▨	▨	▨	▨	▨	▨			
New Brunswick	▨	▨	▨	▨	▨	▨	▨	▨				▨
Nova Scotia			▨	▨	▨	▨	▨	▨				
Newfoundland	▨	▨	▨	▨	▨	▨	▨	▨	▨			

DIAGRAM SHOWING CLOSE SEASONS FOR WILD DUCKS IN 1901.

The shaded areas indicate close seasons. [1] Seasons vary in different counties.

tory game bird is in danger of extinction and its killing and sale have been prohibited in two or more States lying south of the Province, one being New York, Pennsylania, or Michigan, the Lieutenant-Governor-in-Council may extend the same protection to Ontario for the same period during which the bird is protected in such States (see p. 144).

The need of greater uniformity, particularly in seasons, has long been recognized, and the success which has attended the efforts in this direction during the present year gives new importance to the suggestions made a few years ago in an outline of cooperative game legislation known as the Hallock Code.

A STEP TOWARD UNIFORMITY—THE HALLOCK CODE.

In an address before the National Game, Bird, and Fish Protective Association[1] in 1897 Mr. Charles Hallock advocated a code of cooperative legislation, in accordance with which the United States was to be divided into three 'concessions,'[2] in each of which the laws were to be as uniform as possible, the open seasons identical, and protection was to be accorded to insectivorous birds, but withheld from a few species considered injurious.

The feature of special interest in this connection is the simple manner in which the States were grouped together. The three concessions were named Northern, Southern, and Pacific, and as originally proposed were limited as follows: All the region west of the crest of the Rocky Mountains was included in the Pacific, while all that east of this range was divided at latitude 36° 30′ into a Northern and a Southern concession. This division, however, had the disadvantage of cutting through Colorado and New Mexico, thus giving each a double set of laws. Moreover, the Pacific concession extended from Puget Sound to the Mexican boundary and embraced wide extremes of climate. The scheme has therefore been slightly modified, for present purposes, by extending the Northern concession over the whole of Colorado and allowing the Southern to include not only all of New Mexico, but also Arizona (see Pl. III). This places all the region south of latitude 36° 30′ (except part of southern California) in one division. All the States east of the Rocky Mountains with these exceptions belong to the Northern or Southern concessions, while California, Idaho, Nevada, Oregon, Utah, and Washington form the Pacific. For a simple division this seems to meet all requirements fairly well, and while it may not be practicable to secure identical laws in all the States in each group, a strong effort should at least be made to have the close seasons correspond as nearly as possible.

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[1] Western Field and Stream, Vol. I, pp. 232–234, 1897.

[2] Called 'concession' because based on compromise and reciprocity.

RESTRICTIONS AS TO TIME OF KILLING GAME.

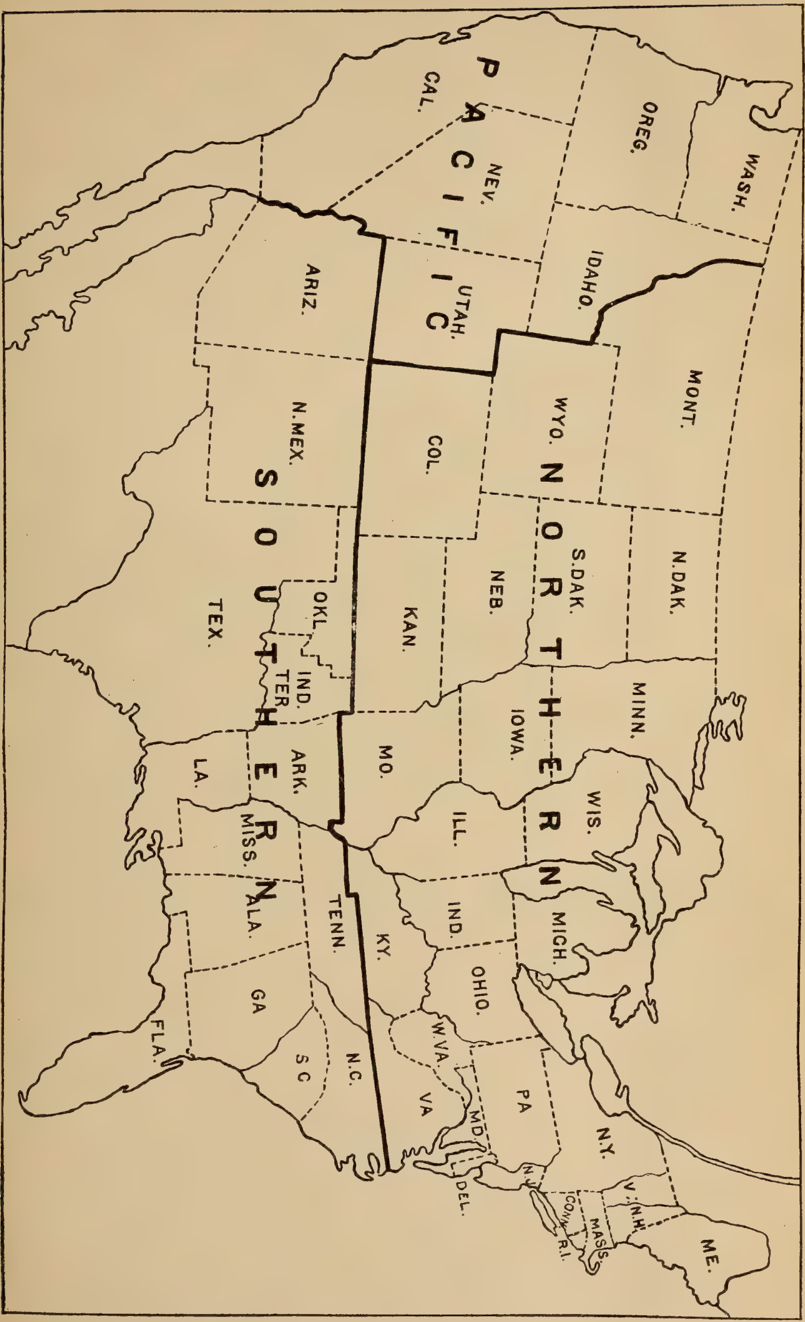
Restrictions as to time of killing game may be grouped under two general heads: Close seasons proper or the part of the year in which game is protected, and close terms in which protection extends over several years. In the latter case the species so protected are to all intents and purposes temporarily removed from the game list.

CLOSE SEASONS.

No question in game protection is more important than that of the seasons during which birds and animals shall be protected, yet, strange to say, there is none in which State game laws show greater diversity and none in which they are more subject to change. Lack of uniformity often defeats the purpose of provisions intended to allow game an opportunity to recuperate and introduces needless confusion. Moreover, it makes compliance with the provisions of the Federal law difficult for shippers and game dealers, who must consider the open seasons in both the State in which their game is killed and that to which it is shipped. Further confusion results from diversity in defining the seasons. Some laws give the open seasons, others the closed, and in these statements may be found all possible varieties of inclusion and exclusion of the dates named.

An attempt is here made to bring together in one table all the close seasons for game prescribed by the various States and by the Provinces of Canada. For the sake of simplicity, a uniform method is used both in the arrangement of species and statement of seasons. In each case big game is first considered, then follow squirrels and rabbits; then upland game birds, such as quail, grouse, pheasants, turkeys, and doves; then shore birds; and finally water fowl, such as ducks, geese, and swans. In the statement of seasons only close seasons have been given, and in stating these the plan of the Vermont law, to include the *first* date but not the last, has been followed consistently. The Vermont scheme has the advantage of showing readily both the open and close seasons, since either may be obtained by reading the other backward. Thus, when the close season is stated as December 1 to October 1, the open season begins October 1 and ends December 1 (in each case the last date being excluded).

In some States certain days of the week constitute additional close seasons throughout the term in which killing is permitted. Sundays constitute a close season for all game in Maine, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Allegany


PACIFIC
NORTHERN
SOUTHERN
WASH.
OREG.
CAL.
NEV.
IDAHO.
UTAH.
ARIZ.
MONT.
WYO.
COL.
N.MEX.
N.DAK.
S.DAK.
NEB.
KAN.
OKL.
IND. TER.
TEX.
MINN.
IOWA.
MO.
ARK.
LA.
WIS.
ILL.
MISS.
ALA.
MICH.
IND.
OHIO.
KY.
TENN.
GA
FLA.
S.C.
N.C.
W.VA.
VA
MD.
DEL.
PA
N.J.
N.Y.
CONN.
R.I.
MASS.
V.
N.H.
ME.

MAP SHOWING DIVISIONS PROPOSED BY HALLOCK CODE.

The States and Territories are so grouped that game seasons may be uniform, or nearly so, in each division.

County, Md., the District of Columbia, North Carolina, Alabama, Florida, Ohio, Indiana, and the Indian Territory, and in Manitoba, Ontario, New Brunswick, and Newfoundland. Mondays also constitute a close season for ducks in Ohio; Mondays, Wednesdays, and Fridays for wild fowl in Carteret County, N. C., and Wednesdays and Saturdays for wild fowl in Currituck County, N. C. Similar exceptions are made for wild fowl in Anne Arundel, Cecil, Dorchester, and Harford counties, Md., and in Connecticut for wild fowl at certain points on the Housatonic River and Long Island Sound.

These special exceptions and the county laws of Alabama and Mississippi, of which no recent compilation is available, are not given in the following table; but otherwise the table may be regarded as a practically complete résumé of the regulations now in force. It is based primarily on the summary contained in 'Game Laws in Brief,' and has been corrected to August 1, 1901. The section relating to Maryland county laws has been taken from the abstract prepared by the Maryland Game and Fish Protective Association. That for North Carolina is based on the synopsis of the game laws published by the secretary of the State Board of Agriculture,[1] supplemented by the Public Laws of 1901. That relating to Tennessee county laws has been compiled directly from the code of 1896 and the session laws of 1897 and 1899. Finally, the section for Virginia has been compiled from the codes of 1887 and supplement of 1900, and the session laws of 1888–1900.

The difficulty of securing absolute accuracy in a table of this kind is very great, and the absence in the laws of many States of express legislation as to the inclusion or exclusion of the dates beginning and ending the seasons makes exactness almost an impossibility.

Close seasons.

[The close seasons include the first date, but not the last. To find the open seasons reverse the dates. No close season is prescribed by State laws for any game not mentioned in the list. Seasons which apply only to special counties are given in the middle column. See also tables at end of bulletin.]

States.	Kinds of game.	Close seasons.
Alabama (1899.)	Deer	Jan. 1–Sept. 1.
	Squirrel (black, gray, or fox)	Feb. 2–July 1.
	Quail, partridge, grouse, prairie chicken, pheasant, wild turkey, woodcock.	Mar. 2–Nov. 15.
	Dove	Mar. 1–Aug. 1.[2]
	Pheasant (Chinese, English, Mongolian), 5 years	Until Feb. 8, 1904.
	(59 counties excepted from operation of State law, but numerous county laws in force.)	
Arizona (1901.)	Male deer	Dec. 15–Nov. 15.
	Female deer, fawn, elk, mountain sheep, mountain goat	At all times.
	Antelope	Until Jan. 1, 1906.
	Quail, bobwhite, grouse, pheasant, snipe, rail, duck, goose, brant.	Mar. 1–Oct. 15.
	Wild turkey	Dec. 15–Nov. 15.
Arkansas	Deer	Mar. 1–Sept. 1.
	Quail or Virginia partridge	Mar. 1–Oct. 1.
	Pinnated grouse, prairie chicken	Dec. 1–Oct. 31.
	Wild turkey	May 1–Sept. 1.
	Dove	At all times.

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[1] Bull. N. C. State Board Agriculture for Oct., 1900.

[2] This seems to be the intent of the law, but two lines have evidently been transposed in printing. See Bull. No. 12, Biol. Survey, p. 56.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
California (1901.)	Male deer	Oct. 1–Aug. 1.
	Female deer, fawn, elk, antelope, mountain sheep	At all times.
	Tree squirrel	Feb. 1–Aug. 1.
	Quail, partridge, grouse, sage hen, plover, curlew, ibis, rail, wild duck.	Feb. 1–Oct. 1.
	Mongolian or English pheasant, bobwhite, Eastern or Chinese quail, English partridge.	At all times.
	Dove	Feb. 1–Aug. 1.
Colorado (1899.)	Deer and antelope with horns	Nov. 6–Aug. 15.
	Elk with horns	Nov. 6–Oct. 25.
	Bison or buffalo, mountain sheep	At all times.
	Quail, pheasant, partridge, ptarmigan	At all times.
	Grouse, prairie chicken, sage chicken, wild turkey	Nov. 1–Aug. 15.
	Dove, wild pigeon	Oct. 1–July 15.
	Snipe, curlew, crane, duck, goose, brant, swan, waterfowl (see exception).	Apr. 16–Sept. 1.
	Exception: Altitudes above 7,000 feet	Apr. 16–Sept. 15.
Connecticut (1901.)	Deer, 10 years	Until June 1, 1911.
	Gray squirrel	Dec. 1–Oct. 1.
	Wild hare, rabbit	Jan. 1–Oct. 1.
	Quail, ruffed grouse, woodcock	Dec. 1–Oct. 1.
	Pheasant (Chinese or Mongolian)	Until June 1, 1906.
	Dove	At all times.
	Wilson's snipe (English snipe), plover, rail, gallinule, mud hen, bay snipe, shore birds, web-footed wild fowl.[1]	Apr. 1–Sept. 1.
Delaware (1895.)	Rabbit	Jan. 1–Nov. 15.
	Quail, partridge, pheasant	Jan. 1–Nov. 15.
	Dove	At all times.
	Reedbird	Feb. 1–Aug. 25.
	Ortolan or rail	Feb. 1–Sept. 1.
	Wild duck (except summer or wood duck), wild goose, brant, swan.	Apr. 15–Oct. 1.
District of Columbia. (1899–1901.)	Deer meat (sale or possession prohibited)	Jan. 1–Sept. 1.
	Rabbit (except English rabbit, Belgian hare), squirrel	Feb. 1–Nov. 1.
	Quail or partridge	Mar. 15–Nov. 1.
	Ruffed grouse or pheasant (except English, ringneck, or other foreign pheasants raised in inclosures), wild turkey.	Dec. 26–Nov. 1.
	Prairie chicken or pinnated grouse	Mar. 15–Sept. 1.
	Woodcock	Jan. 1–July 1.
	Dove	At all times.
	Snipe, plover, wild duck, goose, brant	Apr. 1–Sept. 1.
	Reedbird, marsh blackbird, water rail or ortolan, other game birds not previously mentioned.	Feb. 1–Sept. 1.
Florida[2] (1899.)	Deer	Feb. 1–Oct. 1.
	Quail or partridge, wild turkey	Mar. 1–Nov. 1.
	Wild duck	Apr. 1–Oct. 1.
Georgia	Deer	Jan. 1–Sept. 1.
	Quail, partridge, pheasant, wild turkey	Mar. 15–Nov. 1.
	English, Mongolian, and other imported pheasants	Until Nov. 30, 1905.
	Dove	Mar. 15–Aug. 15.
Idaho (1899.)	Deer, antelope, mountain sheep, mountain goat	Jan. 1–Sept. 1.
	Elk	Dec. 1–Sept. 1.
	Moose, caribou, 5 years	Until 1904.
	Quail	Dec. 1–Nov. 1.
	Partridge, grouse, prairie chicken, sage hen or fool hen, pheasant.	Dec. 1–Aug. 15.
	Mongolian pheasants, 3 years	Until 1902.
	Wild duck, goose, swan	Mar. 1–Aug. 15.
Illinois (1899–1901.)	Deer, 5 years	Until May 10, 1906.
	Squirrel (gray, red, fox, or black)	Dec. 1–July 1.
	Quail (sale only)[3]	Dec. 20–Nov. 1.
	Ruffed grouse, pheasant or partridge, prairie chicken, pinnated grouse.	Oct. 1–Aug. 31.
	Wild turkey	Jan. 15–Sept. 1.
	Pheasants (copper or Soemmering, English, golden, green Japanese, Mongolian, ringneck, silver, tragopan), partridge (black India, cacubis, chucker), sand grouse, 5 years.	Until May 10, 1906.
	Mourning dove	Dec. 1–Aug. 1.
	Golden, upland, or other plover, jacksnipe, Wilson's snipe, sand or other snipe.	Apr. 25–Sept. 1.
	Duck, goose, brant, or other water fowl	Apr. 15–Sept. 1.
Indiana (1901.)	Deer	At all times.
	Squirrel	Jan. 1–June 1. Oct. 1–Nov. 10.[4]
	Quail, ruffed grouse, prairie chicken, or pinnated grouse	Jan. 1–Nov. 10.

[1] Certain local restrictions are in force.

[2] No game or game birds permitted to be killed within 1 mile of West Palm Beach; similar regulations are in force at St. Augustine.

[3] Export and sale are prohibited as before. For sale seasons, see p. 55. The omission of quail from the law of 1901 affects only killing. The Attorney-General has advised the game commissioner that the birds can still be protected under other sections. In a case recently tried at Morgan Park, a suburb of Chicago, the offender was convicted and fined, it being held that the new law contained no clause effectively repealing the provisions relating to quail in the old law (Forest and Stream, Vol. LVII, pp. 84, 167, August, 1901).

[4] Unless permit be obtained.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Indiana (1901.)	Pheasants (copper, golden, green Japanese, ringneck, Mongolian, silver, English, or any other species), wild turkey.	At all times.
	Dove	Jan. 1–Aug. 15. Oct. 1–Nov. 10.
	Woodcock	Jan. 1–July 1.
	Wild duck, wild goose, brant, or other waterfowl	Apr. 15–Sept. 1. Oct. 1–Nov. 10.[2]
Iowa[1] (1897.)	Deer, elk, mountain goat	At all times.
	Squirrel (gray, timber, or fox)	Jan. 1–June 1.
	Quail, ruffed grouse or pheasant, wild turkey	Jan. 1–Nov. 1.
	Pinnated grouse or prairie chicken	Dec. 1–Sept. 1.
	Turtle dove	At all times.
	Woodcock	Jan. 1–July 10.
	Wild duck, goose, brant	Apr. 15–Sept. 1
Kansas (1901.)	Quail	Jan. 1–Dec. 1.
	Grouse, prairie chicken	Oct. 1–Aug. 15.
	Partridge, pheasant	At all times.
	Grouse, prairie chicken	Oct. 1–Aug. 15.
	Dove, plover	Sept. 15–July 15.
Kentucky (1894.)	Deer	Mar. 1–Sept. 1.
	Squirrel (black, gray, or fox)	Feb. 1–June 15.
	Quail, partridge, pheasant	Jan. 1–Nov. 15.
	Wild turkey	Feb. 1–Sept. 1.
	Dove	Feb. 1–Aug. 1.
	Woodcock	Feb. 1–June 20.
	Wood duck, teal, or other wild duck, goose	Apr. 1–Aug. 15.
Louisiana (1900.)	Deer	Feb. 15–Sept. 15.
	Quail, partridge, pheasant, dove	Mar. 1–Oct. 1.
	Wild turkey	May 1–Oct. 1.
	Wood duck, blue-winged teal	May 1–Aug. 1.
	Other ducks	Apr. 1–Sept. 1.
Maine (1899–1901.)	Deer (see exceptions)	Dec. 15–Oct. 1.
	Exceptions:	
	Androscoggin, Cumberland (certain towns), Knox, Lincoln ... Nov. 1–Oct 1	
	Hancock—in towns of Isle au Haut until 1907, and Swan's Island until 1906; otherwise as in State law.	
	Kennebec ... Dec. 1–Oct. 1	
	Sagadahoc, York ... Until Oct. 1, 1903	
	Waldo ... Nov. 16–Oct. 1	
	Bull moose (cow or calf protected at all times)	Dec. 1–Oct. 15.
	Caribou	Until Oct. 15, 1905.
	Quail	Dec. 1–Oct. 1.
	Ruffed grouse or partridge, woodcock	Dec. 1–Sept. 15.
	Pheasant (except ruffed grouse), black game, capercailzie or cock of the woods, 10 years.	Until Mar. 22, 1911.
	Dove	At all times.
	Plover, snipe, sandpipers	May 1–Aug. 1.
	Wood duck, dusky or black duck, teal, gray duck	Dec. 1–Sept. 1.[3]
Maryland[4] (1898–1900.)	Deer, only in the following counties:	
	Allegany ... Jan. 1–Aug. 1	
	Garrett ... Until Sept. 30, 1906	
	Washington ... Jan. 15–Nov. 1	
	Squirrel (see exceptions)	Dec. 1–Sept. 1.
	Exceptions:	
	Allegany, Garrett (State law) ... Unprotected	
	Caroline ... Dec. 25–Nov. 15	
	Frederick (gray or fox squirrel) ... Nov. 1–June 15	
	Howard ... Oct. 1–May 1	
	Kent ... At all times	
	Montgomery (gray squirrel) ... Dec. 15–Aug. 1	
	Washington ... Dec. 1–June 1, and July 1–Sept. 15	
	Wicomico ... Feb. 15–Sept. 1	
	Rabbit:	
	Baltimore, Baltimore City (sale), Calvert, Dorchester, Howard, Kent, Prince George (State law) ... Dec. 25–Nov. 1	
	Allegany ... Jan. 1–Oct. 15	
	Anne Arundel, Caroline, Queen Anne ... Dec. 25–Nov. 15	
	Carroll ... Dec. 25–Nov. 10	
	Cecil ... Jan. 10–Nov. 1	
	Charles ... Jan. 15–Oct. 15	
	Frederick, Harford ... Dec. 15–Nov. 15	
	Garrett (State law) ... Feb. 1–Nov. 1	
	Montgomery ... Dec. 20–Nov. 1	
	St. Mary ... Jan. 15–Sept. 1	
	Somerset ... Jan. 1–Nov. 10	

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[1] For sale seasons, see p. 55.

[2] Unless permit be obtained.

[3] Except month of April.

[4] The term 'State law' is used to indicate the seasons fixed by the public general law of 1898 in contradistinction to the special county laws. The seasons which apply to the whole State or a majority of the counties are placed in the third column; those relating only to special counties in the middle column.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Maryland ..... (1898–1900.)	Rabbit—Continued.	
	Talbot .... Jan. 1–Nov. 1	
	Washington .... Dec. 25–Oct. 20	
	Wicomico .... Jan. 15–Nov. 1	
	Worcester .... Jan. 15–Nov. 15	
	Quail (or partridge):	
	Baltimore, Baltimore City (sale), Charles, Dorchester, Howard, Kent, Prince George, St. Mary (State law), Dec. 25–Nov. 1	
	Allegany .... Jan. 1–Oct. 15	
	Anne Arundel, Caroline, Queen Anne .... Dec. 25–Nov. 15	
	Calvert .... Jan. 11–Nov. 1	
	Carroll .... Dec. 25–Nov. 10	
	Cecil .... Jan. 10–Nov. 1	
	Frederick .... Dec. 15–Nov. 15[1]	
	Garrett .... Dec. 1–Nov. 1	
	Harford .... Dec. 15–Nov. 15	
	Montgomery .... Dec. 20–Nov. 1	
	Somerset .... Jan. 20–Nov. 20	
	Talbot .... Jan. 1–Nov. 1	
	Washington .... Dec. 25–Oct. 20	
	Wicomico, Worcester .... Jan. 15–Nov. 15	
	Ruffed grouse (or pheasant):	
	Baltimore,[2] Calvert, Caroline, Charles, Howard, Kent, Prince George, Talbot (State law) .... Dec. 25–Nov. 1	
	Allegany, Montgomery .... Jan. 1–Sept. 1	
	Anne Arundel .... Dec. 25–Nov. 15	
	Baltimore City, sale (State law) .... Dec. 25–Oct. 1	
	Carroll, Queen Anne, St. Mary .... Dec. 25–Nov. 10	
	Cecil .... Feb. 1–Sept. 5	
	Dorchester, Wicomico, Worcester (State law) . Feb. 1–Nov. 10	
	Frederick .... Dec. 15–Nov. 15[1]	
	Garrett .... Dec. 1–Nov. 1	
	Harford .... Dec. 15–Nov. 15	
	Somerset .... Until Nov. 10, 1903	
	Washington .... Dec. 25–Aug. 12	
	English pheasant, Mongolian pheasant (see exceptions)	Dec. 25–Nov. 1.
	Exceptions:	
	Dorchester, Somerset, Wicomico, Worcester (State law), Feb. 1–Nov. 10	
	Garrett .... Dec. 1–Nov. 1[3]	
	Wild turkey:	
	Baltimore, Baltimore City (sale), Calvert, Caroline, Charles, Frederick, Howard, Prince George, Talbot (State law), Dec. 25–Nov. 1	
	Allegany .... Jan. 1–Oct. 15	
	Dorchester, Somerset, Wicomico, Worcester[4] (State law), Feb. 1–Nov. 10	
	Garrett .... Dec. 1–Nov. 1	
	Kent .... At all times	
	Montgomery .... Feb. 1–Nov. 1	
	Washington .... Jan. 15–Nov. 1	
	Anne Arundel, Carroll, Cecil, Harford, Queen Anne, St. Mary .... Unprotected	
	Dove (see exceptions)	Dec. 25–Aug. 15.
	Exceptions:	
	Carroll, Frederick, Wicomico .... At all times	
	Kent .... Dec. 25–Aug. 1	
	Somerset .... Jan. 1–Aug. 15	
	Washington .... Dec. 25–Aug. 12	
	Wild pigeon, Kent County only .... Dec. 25–Aug. 1	
	Woodcock:	
	Baltimore, Baltimore City (sale), Calvert, Frederick, Howard (State law) .... Dec. 25–July 1 and Aug. 1–Nov. 1	
	Allegany, Montgomery .... Jan. 1–July 1	
	Anne Arundel .... Dec. 25–Nov. 15	
	Caroline .... Feb. 1–July 5	
	Carroll .... Dec 25–July 15	
	Cecil .... Jan. 1–June 10	
	Charles .... Feb. 24–July 5	
	Dorchester .... Jan. 15–July 1	
	Garrett .... Dec. 1–Nov. 1	
	Harford .... Aug. 10–June 10	
	Kent .... Dec. 25–Nov. 1	
	Prince George .... Dec. 25–June 15 and Sept. 1–Nov. 1	

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[1] Ch. 587, acts 1900.

[2] For sale season in Baltimore City, see p. 55.

[3] According to an act passed in 1900 prohibiting the shooting of 'any pheasant' during stated season. If the term quoted applies only to ruffed grouse, the closed season for imported pheasants is Jan. 1–Nov. 1, as fixed by the general State law of 1898.

[4] It is not clear whether the intent of the law is to protect the wild turkey in these counties for this season or to leave it unprotected.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Maryland (1898–1900.)	Woodcock—Continued.	
	Queen Anne .... Feb. 1–July 5	
	St. Mary .... Feb. 24–July 5	
	Somerset .... Jan. 1–June 15	
	Talbot .... Jan. 1–July 5	
	Washington .... Dec. 25–July 12	
	Wicomico .... Feb. 1–June 15	
	Worcester .... Until July 10, 1902	
	Plover (see exceptions)	May 1–Aug. 15.
	Exceptions:	
	Carroll .... May 1–Sept. 1	
	Kent .... Dec. 25–Aug. 1	
	Wicomico .... Jan. 15–Nov. 15	
	Worcester .... Unprotected	
	Snipe (see exceptions)	May 1–Aug. 15.
	Exceptions:	
	Carroll .... May 1–Sept. 1	
	Kent .... June 1–Mar. 15	
	Wicomico ('sandpiper') .... Jan. 15–Nov. 15	
	Worcester .... Unprotected	
	Sora, water rail, or ortolan (see exceptions)	Nov. 1–Sept. 1.
	Exceptions:	
	Caroline .... Jan. 1–Sept. 20	
	Cecil .... Feb. 1–Sept. 5	
	Harford .... Dec. 15–Sept. 1	
	Prince George (on marshes of Patapsco, Potomac, or Patuxent bordering on Prince George or Anne Arundel counties) .... Nov. 1–Sept. 5	
	Talbot .... Jan. 1–Sept. 10	
	Reedbird (see exceptions)	Nov. 1–Sept. 1.
	Exceptions:	
	Cecil .... Feb. 1–Sept. 5	
	Harford .... Dec. 15–Sept. 1	
	Duck, goose, brant, swan, and other wild fowl (see exceptions).	Apr. 10–Nov. 1.
	Exceptions:	
	Anne Arundel ('wild fowl' on Magothy, South, and Severn rivers) .... May 1–Oct. 1[1]	
	Caroline (duck) .... Apr, 1–Sept. 20[1]	
	Cecil, Harford .... Special local provisions[1]	
	Charles ('acorn or genuine duck') State law. Apr. 10–Oct. 1[1]	
	Dorchester .... Special local provisions[1]	
	Somerset (duck, except wood duck) .... Apr. 1–Oct. 1	
	Wood or summer duck .... Jan. 1–Sept. 1	
	Goose .... Apr. 1–Nov. 1[1]	
	Talbot (wild fowl, except summer duck), on Great Choptank River .... May 1–Oct. 10	
	Summer duck .... Jan. 1–Sept. 10[1]	
	Wicomico (wood or summer duck) .... Jan. 1–Sept. 10[1]	
	Worcester (wood or summer duck) .... Mar. 1–Sept. 1[1]	
Massachusetts[2] (1886–1901.)	Deer, 5 years	Until Nov. 1, 1903.
	Gray squirrel, hare, rabbit (except on Cape Ann and in town of Essex).	Mar. 1–Oct. 1.
	Quail,[3] ruffed grouse or partridge, woodcock (except on Cape Ann).	Dec. 1–Oct. 1.
	Pinnated grouse, dove	At all times.
	Wild or passenger pigeon	May 1–Oct. 1.
	Pheasants (English, golden, Mongolian), 5 years	Until 1905.
	Plover, snipe, sandpiper, rail, or any 'shore,' 'marsh,' or 'beach' birds.	May 1–July 15.
	Wood or summer duck, black duck, teal	Mar. 1–Sept. 1.
	Other ducks	May 20–Sept 1.
Michigan (1897–1901.)	Deer (see exceptions)	Dec. 1–Nov. 8.
	Exceptions:	
	Deer in red coat and fawn in spotted coat	At all times.
	Deer on island of Bois Blanc, and in Allegan, Huron, Lapeer, Macomb, Monroe, Ottawa, St. Clair, Sanilac, and Tuscola counties .... Until Jan. 1, 1906	
	Elk, moose, caribou	Until 1911.
	Squirrel (black, fox, or gray)	Dec. 1–Oct. 15.
	Quail (colin), ruffed grouse (partridge or pheasant—except on Upper Peninsula), spruce hen, woodcock.	Dec. 1–Oct. 20.[4]

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[1] Otherwise as stated in State law.

[2] Gray squirrels, chipmunks, rabbits, and all land birds except English sparrows protected at all times until 1902 on Cape Ann, and the same with the added exception of 'beach or marsh birds' protected in the town of Essex until April 20, 1904.

[3] For sale seasons, see p. 55.

[4] This is the old law. The Attorney-General of Michigan has declared that section 10 of the law of 1901, making Dec. 1–Oct. 1 the close season for quail or colin, ruffed grouse or partridge, spruce hen, and woodcock, is unconstitutional and that the old law on these birds stands unrepealed. Section 10 of the new law as approved by the Governor differs from the same section in the bill passed by the legislature as shown by the legislative journals. (See Am. Field, Vol. LVI, p. 104, Aug. 10, 1901.)

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Michigan (1897–1901.)	Partridge (Upper Peninsula)	Dec. 1–Oct. 1
	Dove	At all times.
	Pheasants (English or Mongolian), pinnated grouse (prairie chicken), wild turkey, wild pigeon.	Until 1910.
	Plover, snipe, wild duck, wild goose, brant, or other waterfowl (except that jacksnipe, bluebill, canvasback, widgeon, pintail, whistler, spoonbill, butterball, and sawbill duck may be hunted Mar. 2–Apr. 10).	Dec. 1–Oct. 1.
Minnesota (1899–1901.)	Deer	Nov. 30–Nov. 10.
	Elk, female moose, female caribou	At all times.
	Moose and caribou (males)	Nov. 21–Nov. 16.
	Quail, partridge, ruffed grouse (pheasant)	Dec. 1–Oct. 1.
	Sharp-tailed or white-breasted grouse, pinnated grouse or prairie chicken, turtle dove, snipe.	Nov. 1–Sept. 1.
	Pheasants (Chinese, English, Mongolian), 5 years	Until Sept. 1, 1904.
	Upland plover, woodcock	Oct. 31–July 4.
	Wild duck, goose, brant, or any aquatic fowl	Jan. 1–Sept. 1.
Mississippi[2] (1892.)	Deer	Mar. 1–Sept. 15.
	Quail or partridge, wild turkey	May 1–Oct. 1.
	Turtle or mourning dove, starling (field lark)	Mar. 1–Sept. 15.
Missouri (1901.)	Deer	Jan. 1–Oct. 1.
	Quail (Virginia partridge), ruffed grouse (pheasant or partridge), Chinese pheasant, pinnated grouse (prairie chicken), wild turkey.	Jan. 1–Nov. 1.
	Turtle dove, meadow lark, plover, woodcock	Jan. 1–Aug. 1.
	Wild duck	Apr. 1–Oct. 1.
Montana (1897–1901.)	Deer, mountain goat	Jan. 1–Sept. 1.
	Elk	Nov. 1–Sept. 1.
	Moose, caribou, antelope, bison or buffalo, mountain sheep	At all times.
	Grouse or prairie chicken, fool hen, pheasant or partridge	Dec. 1–Sept. 1.
	Sage hen, turtle dove	Dec. 15–Aug. 1.
	Quail, Chinese pheasants	At all times.
	Wild duck, goose, brant, swan	May 1–Sept. 1.
Nebraska[1] (1901.)	Deer, antelope (with horns)	Nov. 16–Aug. 15.
	Elk	At all times.
	Quail	Until Nov. 1, 1903.
	Partridge, pheasant, wild turkey, curlew	At all times.
	Prairie chicken, sage chicken, grouse	Dec. 1–Oct. 1.
	Wild pigeon, dove, plover	Oct. 31–Apr. 15.
	Jacksnipe, Wilson snipe, yellow-legs (other snipe protected at all times), wild duck, goose, brant, swan, crane.	Apr. 16–Sept. 1.
Nevada (1901.)	Deer, antelope (males)	Until Mar. 28, 1903.
	Female deer and antelope, all elk, caribou, mountain sheep, mountain goat.	At all times.
	Mountain quail, grouse	Until Sept. 1, 1903.[3]
	Pheasant	Until Sept. 1, 1906.
	Sage hen	Mar. 2–July 1.
	Dove	Nov. 2–July 15.
	Valley quail, prairie chicken, woodcock, plover, snipe, curlew, wind hen [mud hen], sand-hill crane, wild duck, wild goose, bittern.	Mar. 16–Sept. 1.
New Hampshire. (1901.)	Deer (see exceptions), elk, moose, caribou	At all times.
	Exceptions: Deer in Carroll, Coos, and Grafton counties (except towns of Ashland, Canaan, Enfield, Grafton, Lebanon, Lyman, and Orange, in Grafton County).	Dec. 16–Oct. 1.
	Gray squirrel, raccoon	Jan. 1–Sept. 15.
	Hare, rabbit	Apr. 1–Oct. 1.
	Quail, partridge, ruffed grouse, woodcock, Wilson snipe	Dec. 15–Sept. 15.
	Dove	At all times.
	Plover, yellowlegs, sandpiper, rail, duck (except sheldrake). ('Beach birds' may be shot in Rockingham Co. after July 15.)	Feb. 1–Aug. 1.
New Jersey[1] (1900–1901.)	Deer	At all times.[4]
	Squirrels (gray, black, fox), hare, or rabbit	Jan. 1–Nov. 1.
	Quail (partridge), ruffed grouse (partridge or pheasant), English or ring-necked pheasant.	Jan. 1–Nov. 1.
	Dove, upland plover	Oct. 1–Aug. 1.
	Woodcock	Jan. 1–Oct. 1.[5]
	Gray snipe (English or Wilson snipe)	Jan. 1–Aug. 25.[6]
	Reedbird, rail-bird, marsh hen	Jan. 1–Aug. 25.
New Mexico (1901.)	Duck, goose, brant, orother web-footed wild fowl	May 1–Sept. 1.
	Deer, elk, antelope, mountain sheep	Until Mar. 19, 1906.
	Mountain goat	At all times.
	Quail	Mar. 1–Oct. 1.
	Partridge, grouse, prairie chicken, wild turkey	Jan. 1–Oct. 1.
	Pheasants	Until Mar. 14, 1906.[7]

[1] For sale seasons, see p. 55.
[2] County laws in force.
[3] Applies only to counties polling less than 1,900 votes.
[4] Under the general provision protecting all game for which no open season is provided.
[5] Except month of July.
[6] Except month of April.
[7] Under Chap. XXV, Laws of 1901, Oregon or 'Denny' pheasants are protected indefinitely.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
New York[1] (1900–1901).	(See special laws for Long Island below.)	
	Deer (see exceptions)	Nov. 16–Sept. 1.
	Exceptions:	
	Delaware, Greene, Sullivan, and Ulster counties, ... Until 1902	
	Fawns ... At all times	
	Elk, moose, caribou, antelope	At all times.
	Squirrel (black or gray, except in Greene County, Dec. 16–Oct. 1).	Dec. 16–Sept. 1.
	Hare, rabbit:	
	Albany, Columbia, Dutchess, Erie, Livingston, Monroe, Orange, Orleans, Schoharie, Steuben, Ulster, and Wyoming counties ... Dec. 16–Sept. 1	
	Richmond and Rockland counties ... Dec. 31–Nov. 1	
	Oneida and Sullivan counties ... Feb. 15–Sept. 16	
	Greene County ... Dec. 16–Oct. 1	
	Fulton County ... Feb. 1–Nov. 1	
	Quail (see exceptions)	Dec. 16–Nov. 1.
	Exceptions:	
	Cattaraugus, Cayuga, Chautauqua, Erie, Genesee, Monroe, Montgomery, Niagara, Rensselaer, Richmond, Saratoga, Wyoming counties ... Until 1903	
	Grouse (see exceptions)	Dec. 16–Sept. 16
	Exceptions:	
	Greene, Sullivan, and Ulster counties ... Dec. 16–Oct. 1	
	Cayuga, Erie, Genesee, Livingston, Monroe, Niagara, Orleans, Rensselaer, Rockland, and Wyoming counties, ... Until 1903	
	Dove	At all times.
	Mongolian ring-necked pheasants	Until 1905.
	Woodcock (see exceptions)	Dec. 16–Sept. 16.
	Exceptions:	
	Clinton, Essex, Fulton, Hamilton, and Warren counties ... Dec. 16–Aug. 16	
	Oneida County ... Nov. 16–Sept. 1	
	Richmond County ... Jan. 1–July 4	
	Greene and Ulster counties ... Dec. 16–Oct. 1	
	Rensselaer County ... Until 1903	
	Plover, yellow-legs, surf bird, Wilson's or English snipe, jacksnipe, bay snipe, curlew, rail, water chicken, mud hen, gallinule, or shore bird.	May 1–Sept. 1.
	Duck, goose, brant, swan (except in Jefferson County, Feb. 1–Sept. 1).	Apr. 30–Sept. 1
Long Island (1900–1901.)	Deer shooting permitted only on first two Wednesdays and Fridays after first Tuesday of November.	
	Squirrel (black or gray), hare, rabbit	Jan. 1–Nov. 1.
	Quail (except on Robbins Island, protected at all times; and Gardiners Island, Feb. 1–Oct. 15).	Jan. 1–Nov. 1.
	Grouse	Jan. 1–Nov. 1.
	Woodcock	Jan. 1–Aug. 1.
	Pheasants (English or Mongolian ring-neck), in Suffolk County only ... Jan. 1–Nov. 1	
	Plover, ring-neck, killdeer, oxeye, curlew, Wilson's or English snipe, jacksnipe, bay snipe, surf snipe, winter snipe, yellow-legs, willet, dowitcher, short necks, sandpiper, rail.	Jan. 1–July 1.
	Meadow hen, mud hen, gallinule	Dec. 31–Aug. 16.
	Duck, goose, brant, swan	May 1–Oct. 1.
North Carolina (1883–1901.)	Deer (see exceptions)	Jan. 1–Oct. 1.
	Exceptions:	
	Bertie, Pender ... Feb. 1–Oct. 1	
	Brunswick ... Feb. 15–July 15	
	Caldwell ... Until March, 1905	
	Caswell ... Until Feb. 9, 1907	
	Cherokee, Graham, Jackson, Richmond, Scotland, Swain, ... Feb. 15–Aug. 15	
	Clay, Macon ... Until 1902	
	Columbus (Lake Waccamaw), Robeson ... Jan. 1–Oct. 1	
	Currituck (on North River side of Poplar Branch Township) ... Mar. 1–Sept. 21	
	Dare ... Mar. 1–Oct. 15	
	Hyde (except near Mattamuskeet Lake), Tyrrell, ... Feb. 15–Aug. 1	
	Mitchell (Grassy Creek and Snow Creek townships), ... Nov. 15–Oct. 15	
	Montgomery ... Until 1906	
	Pamlico ... Mar. 1–Sept. 1	
	Tyrrell ... Feb. 1–Oct. 15	
	Johnston, and all the counties east of the Wilmington and Weldon R. R. (except New Hanover and such as are mentioned above) ... Unprotected	

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[1] For sale season, see p. 55.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
North Carolina (1883–1901.)	Squirrel:	
	Bertie, Martin .... Mar. 1–Aug. 15	
	Pamlico .... Mar. 1–Sept. 1	
	Pasquotank .... Mar. 1–Oct. 1	
	Opossum:	
	Allamance, Anson, Caswell, Chatham, Franklin, Gaston, Guilford, Halifax, Mecklenburg, Moore, Orange, Wake, and Warren .... Feb. 1–Oct. 1	
	Pamlico .... Mar. 1–Sept. 1	
	Quail or partridge (see exceptions)	Mar. 15–Nov. 1.
	Exceptions:	
	Beaufort, Hyde .... Mar. 20–Oct. 15	
	Bertie, Camden, Currituck, Pasquotank ... Mar. 1–Nov. 1	
	Cabarrus, Davidson, Montgomery, Randolph, Mar. 1–Nov. 15	
	Carteret (Bogue Banks) .... Until Mar. 11, 1905	
	Dare, Granville, Tyrrell .... Mar. 1–Oct. 15	
	Davidson .... Apr. 1–Oct. 1	
	Henderson .... Feb. 15–Nov. 15	
	Mecklenburg .... Jan. 10–Dec. 1	
	New Hanover, Richmond, Scotland .... Apr. 1–Oct. 15	
	Pamlico .... Mar. 1–Sept. 1	
	Rowan, Surry .... Feb. 1–Dec. 1	
	Warren .... Mar. 15–Oct. 10	
	Wilson .... Feb. 1–Nov. 15	
	Cherokee, Clay, Columbus, Graham, Jones, Macon, Onslow, Swain .... Unprotected	
	Pheasant:	
	Cherokee .... May 10–Oct. 10	
	Currituck .... Until Apr. 1, 1906	
	Henderson .... Feb. 15–Nov. 15	
	Rowan .... Feb. 1–Dec. 1	
	Wild turkey (see exceptions)	Mar. 15–Nov. 1.
	Exceptions:	
	Bertie (male birds May 1–Nov. 1), Chatham. Mar. 1–Nov. 1	
	Carteret (Bogue Banks) .... Until Mar. 11, 1905	
	Cherokee .... May 10–Oct. 10	
	Cabarrus, Davidson .... Mar. 1–Nov. 15	
	Granville .... Mar. 1–Oct. 15	
	Henderson .... Feb. 15–Nov. 15	
	Macon .... May 1–Oct. 15	
	Martin (male birds) .... May 1–Jan. 1	
	Mecklenburg, Wilson .... Feb. 1–Nov. 15	
	Pamlico .... Mar. 1–Sept. 1	
	Pender .... Feb. 1–Oct. 1	
	Randolph, Rowan .... Feb. 1–Dec. 1	
	Richmond, Scotland .... Apr. 1–Oct. 15	
	Stanly .... At all times	
	Warren .... Mar. 15–Oct. 10	
	Carteret, Clay, Columbus, Craven, Cumberland, Dare, Duplin, Graham, Jones, Montgomery, Onslow, Swain, Tyrrell .... Unprotected	
	Dove (see exceptions)	Mar. 15–Nov. 1.
	Exceptions:	
	Beaufort .... Mar. 20–Oct. 15	
	Bertie .... Mar. 1–Nov. 1	
	Cabarrus .... Mar. 15–Nov. 15	
	Davidson, New Hanover, Richmond, Scotland, Apr. 1–Oct. 15	
	Granville .... Mar. 1–Oct. 15	
	Mecklenburg .... Feb. 1–Nov. 15	
	Montgomery .... Mar. 1–Nov. 15	
	Rowan .... Feb. 2–Dec. 1	
	Vance .... Mar. 15–Oct. 15	
	Warren .... Mar. 15–Oct. 10	
	Carteret, Cherokee, Clay, Columbus, Craven, Cumberland, Dare, Duplin, Edgecombe, Graham, Jones, Macon, Moore, Onslow, Pamlico, Swain, Tyrrell, Unprotected	
	Woodcock:	
	Randolph .... Mar. 1–Nov. 15	
	Rowan .... Feb. 2–Dec. 1	
	Snipe:	
	Henderson .... Feb. 15–Nov. 15	
	Marsh hen, curlew, and other shore birds:	
	New Hanover .... Apr. 1–Sept. 1	
	Wild fowl:	
	Brunswick, New Hanover .... Mar. 10–Nov. 1	
	Carteret .... Jan. 1–Dec. 1	
	Currituck .... Apr. 1–Nov. 10	
	Henderson .... Feb. 15–Nov. 15	

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
North Dakota (1901.)	Deer	Dec. 1–Nov. 10.
	Elk, moose, caribou, buffalo, mountain sheep	At all times.
	Antelope	Until Jan. 1, 1911.
	Quail, English or Chinese pheasant, wild swan	Until Sept. 1, 1905.
	Sharp-tailed grouse, ruffed grouse, pinnated grouse, prairie chicken, woodcock.	Oct. 15–Sept. 1.
	Wild duck, wild goose, crane, brant	May 1–Sept. 1.
Ohio[1] (1900.)	Deer	Dec. 16–Nov. 10.
	Squirrel, rabbit	Dec. 2–Nov. 10.
	Quail, ruffed grouse or pheasant, prairie chicken, plover, killdeer, woodcock, snipe, rail.	Dec. 2–Nov. 10.
	Coot or mud hen, wild duck[2]	Dec. 2–Nov. 10.[3]
	English, Mongolian, and ring-necked pheasants	Dec. 16–Nov. 10.
Oklahoma (1899.)	Deer, antelope	At all times.
	Quail	Feb. 1–Oct. 15.
	Prairie chicken, wild turkey	Jan. 1–Sept. 1.
	Mongolian or other pheasants	Until Jan. 1, 1904.
	Grouse	At all times.
	Dove, plover	Jan. 1–Aug. 1.
Oregon[1] (1901.)	Deer (except spotted fawn, protected at all times), antelope, moose, mountain sheep (see exceptions).	Nov. 1–July 15.
	Exceptions:	
	Grant, Harney, Malheur, and Baker counties, deer and antelope, Oct. 15–Oct. 1, and female deer in rest of State, Nov. 1–Aug. 15.	
	Elk	Until Sept. 15, 1904.
	Silver-gray squirrel (*Sciurus fossor*)	Jan. 1–Oct. 1.
	English or gray partridge, capercailzie, moor hen, pheasants (silver, golden, copper, green Japanese, and Reeves), wild turkey, woodcock.	Until Oct. 1, 1905.
	Rail, upland plover	Jan. 1–Aug. 1.
	Mallard, wood duck, widgeon, teal, spoonbill (gray, black, sprig-tail), canvasback duck, wild goose, wild swan (except in Jackson, Klamath, and Lake counties, Jan. 1–Sept. 15, and in Coos County, Aug. 1–Feb. 1).	Mar. 1–Sept. 1.
	West of Cascades (see exceptions):	
	Quail, bobwhite quail, partridge, grouse, native pheasant (ruffed grouse), ring-neck or China torquatus pheasant, prairie chicken.	Dec. 1–Oct. 1.
	Exceptions:	
	Douglas County: Quail, bobwhite quail, partridge, native pheasant, ring-neck or China torquatus pheasant, prairie chicken.........Dec. 1–Sept. 1?	
	Grouse, ruffed grouse ....Dec. 1–Aug. 1?	
	Tillamook County: Native pheasant (ruffed grouse), ring-neck or China torquatus pheasant, Until Sept. 15, 1904	
	Blue grouse.........Oct. 15–Aug. 1	
	Clatsop, Coos, Curry, Jackson, and Josephine counties: Ring-neck or China torquatus pheasant, Until Sept. 15, 1904	
	East of Cascades:	
	Quail, except bobwhite, pheasant, native pheasant (ruffed grouse), grouse, sage hen.	Nov. 1–Aug. 1.
	Bobwhite	Until Oct. 15, 1905.
	Prairie chicken (except in Wasco County, Oct. 15–Aug. 1)	Until Aug. 15, 1903.
Pennsylvania (1897.)	Deer, elk	Dec. 1–Nov. 1.
	Squirrel (black, gray, or fox)	Dec. 16–Oct. 15.
	Hare, rabbit	Dec. 16–Nov. 1.
	Quail, partridge, grouse, prairie chicken, pheasant, wild turkey	Dec. 16–Oct. 15.
	Pheasants (Chinese, English, Mongolian), 5 years	Until May 27, 1902.
	Woodcock	Dec. 16–Oct. 15.[4]
	Upland or grass plover	Jan. 1–July 15.
	Rail, reedbird	Dec. 1–Sept. 1.
	Web-footed wild fowl	May 1–Sept. 1.
Rhode Island (1900–1901.)	Deer, 5 years	Until Feb. 1, 1905.
	Gray squirrel, rabbit, hare	Jan. 1–Oct. 15.
	Quail or bob-white, ruffed grouse or partridge, woodcock	Dec. 16–Oct. 15.
	Pheasant (except ruffed grouse), 5 years	Until Oct. 1, 1905.
	Dove	At all times.
	Black duck and wood duck	Apr. 1–Aug. 15.
South Carolina	Deer (see exceptions)	Feb. 1–Sept. 1.
	Exceptions: Berkeley, Clarendon, Colleton, Darlington, Georgetown, Horry, Kershaw, Marlboro, Marion, and Williamsburg.........Feb. 1–Aug. 1	
	Quail, partridge, pheasant, wild turkey, woodcock	Apr. 1–Nov. 1.
	Mongolian or ring-neck pheasants, 10 years	Until Dec. 22, 1903.
	Dove	Mar. 1–Aug. 1.

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[1] For sale seasons, see p. 56.

[2] Wild ducks can not lawfully be killed on Sunday or Monday, or on any of the reservoirs belonging to the State of Ohio, or on the waters of Lake Erie or its estuaries or bays, or on the rivers, creeks, ponds, or other waters of the State.

[3] Except Mar. 11–Apr. 10.

[4] Except month of July.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
South Dakota (1899–1901.)	Deer, elk, buffalo, mountain sheep	Jan. 1–Nov. 1.
	Antelope	Until Jan. 1, 1911.
	Quail, ruffed grouse, sharp-tailed grouse, pinnated grouse, prairie chicken, woodcock.	Jan. 1–Sept. 1.
	Plover, curlew	May 15–Sept. 1.
	Duck, goose, crane, brant	May 1–Sept. 1.
Tennessee (1896–1899.)[1]	Deer:	
	Anderson, Cheatham, Coffee, Dickson, Fayette, Hamblen, Hardeman, Haywood, Houston, Jefferson, Knox, Lake, London, McMinn, Monroe, Obion, Roane, Rutherford, Stewart, Sumner, Tipton, Trousdale, Williamson,	Jan. 1–Aug. 1
	Carter, Sullivan	At all times.
	Bedford, Davidson, Dyer, Giles, Henry, Madison, Maury, Wilson	Mar. 1–Sept. 1
	Bledsoe, Cumberland, Dekalb, Fentress, Hamilton, Hancock, Johnson (by law of 1893), Montgomery, Morgan, Rhea, Unicoi, White	Dec. 1–Oct. 1
	Franklin	Jan. 1–Oct. 1
	Grainger, Lauderdale	Mar. 1–Oct. 1
	Hardin	Mar. 15–Sept. 15
	Shelby	Feb. 1–Sept. 1
	Warren	Feb. 1–Nov. 1
	Restrictions in other counties uncertain.	
	Squirrel (Shelby County only)	Feb. 1–Sept. 1(?)
	Quail or partridge:	
	Anderson, Blount, Cocke, Coffee, Dickson, Fayette, Hancock, Hardeman, Houston, Jefferson, Knox, Lake, London, McMinn, Monroe, Roane, Sevier, Stewart, Sumner, Tipton, Williamson	Mar. 1–Nov. 1(?)
	Bedford	Until Feb. 10, 1902
	Bradley, Greene, Warren	Feb. 1–Nov. 1
	Carter, Hamblen, Hamilton, Hawkins, Henderson, Henry, Johnson, Marion, Sullivan, Unicoi	Apr. 1–Oct. 1
	Cheatham	Mar. 1–Oct. 15
	Davidson, Lincoln, Madison	Mar. 1–Sept. 15
	Dyer	Apr. 1–Sept. 1
	Franklin	Apr. 1–Dec. 1
	Gibson, Giles, Weakley, Wilson (law of 1899)	Mar. 1–Nov. 1
	Grainger, Lauderdale	Mar. 1–Oct. 1
	Hardin	Mar. 15–Sept. 15
	Haywood, Marshall, Montgomery, Rutherford,	Feb. 15–Nov. 16
	Putnam	Feb. 1–Oct. 1
	Robertson	Feb. 1–Sept. 1
	Trousdale	Jan. 1–Nov. 1
	Washington	Feb. 1–Nov. 16
	Wilson (law of 1897)	Until Mar. 30, 1902
	Restrictions in other counties uncertain.	
	Grouse:	
	Bedford, Davidson, Dyer, Giles, Hamilton, Henry, Lincoln, Madison, Maury, Wilson	Feb. 1–Sept. 1
	Bradley, Greene, Warren	Feb. 1–Nov. 1
	Cheatham, Montgomery	Mar. 1–Oct. 15
	Grainger	Mar. 1–Oct. 1
	Hardin	Mar. 15–Sept. 15
	Robertson, Sumner, Trousdale	Until Apr. 21, 1904
	Shelby	Feb. 1–Sept. 1
	Pheasant:	
	Bedford, Davidson, Dyer, Giles, Lincoln, Madison, Maury, Wilson	Mar. 1–Sept. 15
	Bradley, Greene, Warren	Feb. 1–Nov. 1
	Carter, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington	Apr. 1–Oct. 1
	Cheatham, Montgomery	Mar. 1–Oct. 15
	Grainger	Mar. 1–Oct. 1
	Hardin	Mar. 15–Sept. 15
	Haywood	Feb. 15–Nov. 16
	Putnam	Feb. 1–Oct. 1
	Robertson, Sumner, Trousdale	Until Apr. 21, 1904
	Weakley	Mar. 1–Nov. 1
	Chinese pheasant (except Warren County, until Feb. 12, 1903), English and other (imported) pheasants.	Until Mar. 13, 1902.
	Wild turkey:	
	Bedford, Davidson, Dyer, Giles, Madison, Maury, Wilson,	May 1–Sept. 15
	Bledsoe, Fentress, Rhea, White	May 1–Oct. 1
	Carter, Greene, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington	Apr. 1–Oct. 1
	Cheatham, Montgomery	Mar. 1–Oct. 15
	Franklin	Apr. 1–Sept. 1
	Grainger, Lauderdale	Mar. 1–Oct. 1
	Hardin	Mar. 15–Sept. 15

[1] Laws of 1901 not accessible at date of going to press.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Tennessee (1896-1899.)	Wild turkey—Continued.	
	Haywood ... Feb. 15-Nov. 16[1]	
	Lincoln ... Mar. 1-Sept. 15	
	Morgan ... Dec. 1-Oct. 1	
	Putnam ... Feb. 1-Oct. 1	
	Robertson, Shelby ... Feb. 1-Sept. 1	
	Warren ... Feb. 1-Nov. 1	
	Weakley ... Mar. 1-Nov. 1	
	Wilson (under 'other game birds') ... Apr. 1-Aug. 1	
	Dove:	
	Bradley, Greene ... Feb. 1-Nov. 1	
	Cheatham, Montgomery ... Mar. 1-Aug. 1	
	Wilson (laws of 1897, p. 423) ... Until Mar. 30, 1902	
	Wilson (laws of 1899, p. 79) ... Apr. 1-Aug. 1	
	Plover:	
	Cheatham, Montgomery ... May 1-Sept. 1	
	Wilson (under 'other game birds') ... Apr. 1-Aug. 1	
	Woodcock:	
	Bedford, Davidson, Dyer, Giles, Lincoln, Madison, Maury, Mar. 1-Sept. 15	
	Bradley, Greene ... Feb. 1-Nov. 1	
	Carter, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington ... Apr. 1-Oct. 1	
	Cheatham, Montgomery ... Mar. 1-Aug. 1	
	Hardin ... Mar. 15-Sept. 15	
	Haywood ... Feb. 15-Nov. 16	
	Robertson, Shelby ... Feb. 1-Sept. 15	
	Wilson ... Until Mar. 30, 1902	
	Snipe:	
	Bedford, Davidson, Dyer, Giles, Lincoln, Madison, Maury, Mar. 1-Sept. 15	
	Bradley, Greene ... Feb. 1-Nov. 1	
	Cheatham, Montgomery ... May 1-Sept. 1	
	Hardin ... Mar. 15-Sept. 15	
	Robertson, Shelby ... Feb. 1-Sept. 1	
	Wilson ... Until Mar. 30, 1902	
	Duck:	
	Cheatham, Montgomery ... May 1-Sept. 1	
	Grainger, Lauderdale ... Mar. 1-Oct. 1	
	Weakley ... Mar. 1-Nov. 1	
	Warren ... Feb. 1-Nov. 1	
	Wilson (under 'other game birds') ... Apr. 1-Aug. 1	
Texas (1897.)	Deer	Jan. 1-Sept. 1.
	Antelope, 5 years	Until May 27, 1902.
	Quail or partridge	Mar. 15-Oct. 1.
	Prairie chicken or pinnated grouse	Feb. 1-Aug. 1.
	Wild turkey	Apr. 1-Sept. 1.
	Pheasant (English or Mongolian), 5 years	Until May 27, 1902.
Utah (1899-1901.)	Deer	Nov. 15-Oct. 15.
	Elk, buffalo or bison, mountain sheep, antelope, quail (see exception), English, Mongolian or Chinese pheasant, pinnated grouse, any introduced game animals, or game birds.	At all times.
	Exception: Quail (Kane and Washington Counties only) Mar. 1-Oct. 1	
	Partridge, grouse, prairie chicken, sage hen, pheasant	Dec. 1-Aug. 15.
	Mourning dove	Dec. 1-July 1.
	Snipe, duck, wild goose, brant, swan	Jan. 15-Oct. 1.
Vermont	Deer (with horns)	Nov. 1-Oct. 22.
	Deer without horns, moose, caribou	At all times.
	Rabbit, hare	May 1-Sept. 1.
	Quail, ruffed grouse or partridge, plover (other than upland), woodcock, English snipe, wild duck, goose.	Jan. 1-Sept. 1.
	Pheasant, English partridge	Nov. 20-Oct. 1.
	Introduced pheasants, by owners on inclosed lands	Dec. 1-Oct. 10.
	Dove	At all times.
	Upland plover	Dec. 1-Aug. 15.
Virginia (1887-1900.)	Deer (see exceptions)	Jan. 1-Aug. 15.[2]
	Exceptions: Alleghany, Augusta, Bath, Botetourt, Highland, Rockbridge ... Dec. 25-Oct. 20	
	Amelia, Nottoway, Prince George, Southampton, Surry, Jan. 15-Sept. 1	
	Bland, Smyth, Tazewell, Wythe ... Jan. 1-Nov. 15	
	Brunswick, Charlotte, Chesterfield ... Feb. 1-Sept. 1	
	Charles City, New Kent ... Jan. 15-Sept. 15	
	Culpeper, King and Queen, Orange ... Feb. 1-Aug. 31	
	Essex ... Feb. 1-Aug. 15	

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[1] An attempt is made to make the close season for turkey in this county May 1-Nov. 1. See Laws of 1897, p. 420.

[2] Close season for hunting with dogs in Page County, Oct. 1-Dec. 1.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Virginia (1887–1900.)	Deer—Continued.	
	Fairfax ..... Dec. 25–Sept. 1	
	Frederick, Shenandoah ..... Dec. 15–Sept. 15	
	Greenesville, Sussex ..... Jan. 15–Aug. 1	
	King William ..... Feb. 1–Nov. 1	
	Lancaster, Northumberland, Richmond ..... Feb 1–Oct. 1	
	Princess Anne ..... Feb 15–Sept. 15	
	Rockingham ..... Dec. 1–Oct. 15	
	Appomattox, Cumberland, Dinwiddie, Lunenburg, Mecklenburg ..... Unprotected	
	Rabbit:	
	Accomac, Northampton ..... Jan. 15–Nov. 15	
	Alexandria ..... Jan. 1–Oct. 1	
	Amelia,[1] Charlotte,[1] Greenesville, Spottsylvania, Sussex, Feb. 1–Oct. 1	
	Buckingham,[2] Cumberland[2] ..... Feb. 15–Oct. 15	
	Caroline, Essex, Hanover, Henrico, King William, Feb. 1–Nov. 1	
	Chesterfield ..... Feb. 1–Sept. 1	
	Culpeper, Orange ..... Jan. 15–Nov. 1	
	Elizabeth City ..... Feb. 1–Nov. 15	
	Fairfax, Fauquier, Loudoun, Prince William ..... Jan. 1–Nov. 1	
	Halifax ..... Feb. 1–Oct. 15	
	Nottoway ..... Jan. 1–Sept. 1	
	Shenandoah ..... Mar. 1–Nov. 1	
	Stafford ..... Feb. 1–Sept. 15	
	Opossum:	
	Halifax ..... Feb. 1–Oct. 15	
	Quail (see exceptions)	Jan. 1–Oct. 15.
	Exceptions: Accomac, Lee, Northampton ..... Jan. 15–Nov. 15	
	Albemarle, Fairfax, Fauquier, Loudoun, Prince William, Rappahannock, Roanoke, Shenandoah, Wythe, and the city of Charlottesville ..... Jan. 1–Nov. 1	
	Alleghany, Augusta, Bath, Botetourt, Highland, Rockbridge ..... Dec. 25–Nov. 1	
	Amherst, Caroline, Dinwiddie, Essex, Franklin, Hanover, Henrico, Henry, King William, Nelson, Northumberland, Pittsylvania, Prince George, Pulaski, Smyth, Spottsylvania, Surry, Washington, Westmoreland, Feb. 1–Nov. 1	
	Amelia, Brunswick, Charlotte, Chesterfield, Cumberland, Nottoway ..... Feb. 1–Oct. 15	
	Bedford, Culpeper, Gloucester, Mathews, Orange, Jan. 15–Nov. 1	
	Buckingham, King and Queen, Powhatan ..... Feb. 15–Oct. 15	
	Clark, Warren ..... Dec. 25–Oct. 31	
	Elizabeth City, Norfolk, Princess Anne ..... Feb. 1–Nov. 15	
	Floyd ..... Jan. 15–Oct. 1	
	Fluvanna ..... Jan. 15–Oct. 15	
	Frederick, Rockingham ..... Dec. 15–Nov. 1	
	Greenesville, Isle of Wight, Nansemond, Southampton, Sussex, and city of Danville ..... Feb. 15–Nov. 1	
	Halifax ..... Feb. 15–Oct. 15	
	King George, Stafford ..... Jan. 5–Nov. 15	
	Mecklenburg ..... Mar. 1–Oct. 15	
	Appomattox, Lunenburg ..... Unprotected	
	Ruffed grouse (see exceptions)	Feb. 1–Sept. 15.
	Exceptions: Albemarle, Culpeper, Orange, city of Charlottesville ..... Jan. 15–Nov. 1	
	Alleghany, Augusta, Bath, Botetourt, Highland, Rockbridge ..... Dec. 25–Oct. 15	
	Amelia, Charlotte ..... Feb. 1–Oct. 1	
	Bland, Buchanan, Carroll, Clarke, Craig, Dickenson, Giles, Grayson, Lee, Page, Pulaski, Russell, Scott, Smyth, Tazewell, Warren, Washington, Wise ..... Feb. 1–Sept. 15	
	Buckingham, Cumberland ..... Feb. 15–Oct. 15	
	Caroline, Hanover, Henrico, Roanoke, Spottsylvania, Feb. 1–Nov. 1	
	Fairfax, Fauquier, Frederick, Loudoun, Prince William, Shenandoah ..... Jan. 1–Nov. 1	
	Floyd ..... Mar. 1–Oct. 1	
	Montgomery ..... Jan. 1–Oct. 15	
	Prince Edward ..... Mar. 1–Oct. 15	
	Wythe ..... Feb. 1–Sept. 1	
	Appomattox, Brunswick, Dinwiddie, Greenesville, Lunenburg, Mecklenburg, Nottoway, Sussex ..... Unprotected	

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[1] In Amelia and Charlotte counties young rabbits or hares may be killed or captured June 1–Aug. 1.

[2] In Buckingham and Cumberland counties young rabbits or hares may be killed or captured June 1–October 15.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Virginia (1887–1900.)	Imported pheasants.	
	Mongolian pheasants and crosses between Mongolian and English pheasants:	
	Albemarle, Alleghany, Augusta, Bath, Bedford, Culpeper, Highland, Louisa, Montgomery, city of Charlottesville .... At all times	
	English pheasants:	
	Augusta, Rockbridge .... To Mar. 1, 1902	
	Mongolian pheasants:	
	Fairfax, Fauquier, Loudoun, Prince William. Jan. 1–Nov. 1	
	Orange .... At all times	
	Rockbridge .... To Mar. 1, 1902	
	Japanese, Mongolian and ring-neck pheasants:	
	Shenandoah .... Feb. 1–Oct. 1	
	Wild turkey (see exceptions)	Jan. 15–Oct. 15.
	Exceptions: Accomac, Northampton .... At all times	
	Albemarle, Culpeper, Gloucester, Orange, city of Charlottesville .... Jan. 15–Nov. 1	
	Alleghany, Augusta, Bath, Botetourt, Highland, Rockbridge .... Dec. 25–Oct. 15	
	Amelia, Nottoway, Prince George, Surry .... Feb. 15–Oct. 1	
	Bedford, Smyth, Washington .... Mar. 15–Nov. 1	
	Bland, Buchanan, Carroll, Clarke, Craig, Dickenson, Giles, Grayson, Lee, Page, Pulaski, Russell, Scott, Tazewell, Warren, Wise .... Feb. 1–Sept. 15	
	Brunswick .... Mar. 1–Oct. 20	
	Buckingham, Cumberland, Greenesville, Sussex, Feb. 15–Oct. 15	
	Caroline, Dinwiddie, Essex, Hanover, Henrico, King William, Roanoke, Shenandoah, Spottsylvania, Feb. 1–Nov. 1	
	Charles City, Charlotte, New Kent .... Feb. 1–Oct. 1	
	Fairfax, Fauquier, Frederick, Loudoun, Prince William, Jan. 1–Nov. 1	
	Floyd .... Mar. 1–Oct. 1	
	Halifax .... Feb. 15–Oct. 15	
	Isle of Wight, Nansemond .... Feb. 15–Sept. 15	
	King and Queen .... Feb. 1–Oct. 15	
	Mecklenburg, Prince Edward .... Mar. 1–Oct. 15	
	Pittsylvania, city of Danville .... Feb. 15–Nov. 1	
	Southampton, Westmoreland .... Feb. 15–Nov. 15	
	Appomattox, Lunenburg .... Unprotected	
	Woodcock (see exceptions)	Apr. 1–Nov. 1.
	Exceptions: Accomac, Northampton .... Jan. 1–July 1	
	Alexandria, Fairfax .... Jan. 1–July 4	
	Alleghany, Augusta, Bath, Rockbridge .... Dec. 31–Oct. 1	
	Caroline, Hanover, Henrico .... Feb. 1–Nov. 1	
	Culpeper, Frederick, King and Queen, Orange, Shenandoah .... Feb. 1–July 1	
	Elizabeth City .... Feb. 1–Nov. 15	
	King George, Stafford .... Jan. 1–Oct. 1	
	Loudoun .... Jan. 1–June 15	
	Amelia, Appomattox, Brunswick, Cumberland, Dinwiddie, Greenesville, Lunenburg, Mecklenburg, Nottoway, Sussex .... Unprotected	
	Willet (see exceptions)	At all times.
	Exceptions:	
	Accomac, Northampton .... Jan. 1–Aug. 15	
	Amelia, Appomattox, Brunswick, Cumberland, Dinwiddie, Greenesville, Lunenburg, Mecklenburg, Nottoway, Sussex .... Unprotected	
	Snipe: Alleghany, Augusta, Bath, Rockbridge ... Dec. 31–Oct. 1	
	Marsh hen (see exceptions)	At all times.
	Exceptions: Accomac, Northampton .... Jan. 1–Sept. 15	
	Amelia, Appomattox, Brunswick, Cumberland, Dinwiddie, Greenesville, Lunenburg, Mecklenburg, Nottoway, Sussex .... Unprotected	
	Waterfowl (except summer duck and sora)	May 1–Sept. 1.
	Exceptions: Accomac, Amelia, Appomattox, Brunswick, Cumberland, Dinwiddie, Greenesville, Lunenburg, Mecklenburg, Nottoway, Sussex .... Unprotected	
	Wood duck: King and Queen (under name 'summer woodcock') .... Feb. 1–Aug. 1	
Washington (1901.)	Deer (except spotted fawn, protected at all times)	Dec. 15–Sept. 15.
	Elk, moose, caribou, antelope, mountain sheep, mountain goat (except females, protected at all times).	Nov. 1–Sept. 1.
	Quail	Until 1903.
	Partridge, grouse, native pheasant, ptarmigan, Oriental pheasants (bronze, Chinese, copper, golden, Mongolian, ring-neck, silver, except in counties east of Cascades until Aug. 15, 1905).	Dec. 1–Aug. 15.

Close seasons—Continued.

States.	Kinds of game.	Close seasons.
Washington (1901.)	Prairie chicken, sage hen (except in counties east of Cascades, Nov. 15–Sept. 15; in Kittitas and Yakima counties until Aug. 15, 1903).	Dec. 1–Aug. 15.
	Plover, rail, sandhill crane, mallard, canvasback, widgeon, teal, wood duck, spoonbill, gray or black duck, sprigtail or other game duck, swan or other game waterfowl.	Mar. 1–Aug. 15.
West Virginia	Deer (except spotted fawn, protected at all times)	Dec. 15–Oct. 15.
	Quail or Virginia partridge	Dec. 20–Nov. 1.
	Ruffed grouse, pheasant, pinnated grouse, or prairie chicken	Dec. 15–Oct. 15.
	Wild turkey	Jan. 1–Sept. 15.
	Dove	At all times.
	Woodcock	Nov. 2–July 15.
	Snipe	July 1–Mar. 1.
	Blue-winged teal, mallard, wood duck or other wild duck, goose, brant.	Apr. 1–Oct. 1.
Wisconsin[1] (1898–1901.)	Deer (see exceptions)	Dec. 1–Nov. 11.
	Exceptions: Adams, Columbia, Marquette, Richland, Sauk counties .... Except last 10 days of November Deer in red coat or fawn in spotted coat, and all deer in Calumet, Fond du Lac, Manitowoc, and Sheboygan counties .... At all times	
	Squirrel, rabbit	May 1–July 1.
	Quail, pheasants (Chinese, English, Mongolian)	Until Sept. 1, 1903.
	Partridge, grouse, prairie chicken or hen, pheasant, plover, woodcock, snipe (see also below).	Dec. 1–Sept. 1.
	Turtle dove, swan	At all times.
	Wild duck, brant, or any aquatic fowl, except wild goose and swan, but including snipe.	Jan. 1–Sept. 1.
	Wild goose	May 1–Sept. 1.
Wyoming (1899.)	Deer, elk, antelope, mountain sheep, mountain goat	Dec. 1–Sept. 1.
	Moose, 3 years	Until Sept. 1, 1902.
	Partridge, grouse, prairie chicken, prairie hen, pheasant	Dec. 1–Aug. 15.
	Mongolian pheasant	Until Sept. 1, 1906.
	Sage chicken	Oct. 15–July 15.
	Dove	At all times.
	Plover, snipe, green shank, tatler, godwit, curlew, avocet, or other wader, duck, goose, brant.	May 1–Sept. 1.
	Wild swan	At all times.
British Columbia.[1] (1898.)	Deer (fawns protected at all times), mountain sheep (ewes and lambs protected at all times), mountain goat.	Dec. 15–Sept. 1.
	Elk or wapiti, moose, caribou (cow or calf elk, moose, or caribou protected at all times), hare.	Jan. 1–Sept. 1.
	Quail, English partridge, pheasant	At all times
	Grouse, prairie chicken	Jan. 1–Sept. 1.
	Plover, duck	Mar. 1–Sept. 1.
Manitoba (1900.)	Deer, elk or wapiti, moose, caribou or reindeer, antelope or cabri (females of foregoing species protected at all times).	Dec. 1–Sept. 15.
	Quail, plover (except upland plover), woodcock, snipe, sandpiper.	Jan. 1–Aug. 1.
	Grouse, pheasant, partridge, prairie chicken	Nov. 15–Sept. 15.
	Upland plover	Jan. 1–July 1.
	Duck	Jan. 1–Sept. 1.
New Brunswick.[1] (1899.)	Deer, moose, caribou (see exceptions)	Jan. 1–Sept. 15.
	Exceptions: Cow and calf moose protected at all times; all moose and caribou west of river St. John protected until Sept. 15, 1902, and in Albert County until Sept. 15, 1903.	
	Partridge	Dec. 1–Sept. 15.
	Pheasant	At all times.
	Snipe, woodcock, teal, wood duck, dusky or black duck, goose, brant.	Dec. 2–Sept. 1.
	Shore or other birds on beaches, islands, or lagoons bordering tidal waters of Northumberland Strait, Gulf of St. Lawrence, and Bay of Chaleur.	Jan. 1–Sept. 1.
Newfoundland.[1] (1899.)	Elk, moose	Until Jan. 1, 1906.
	Caribou	Feb. 1–Oct. 21.[2]
	Hare, rabbit	Mar. 1–Sept. 16.[3]
	Ptarmigan or willow grouse (partridge), other grouse, plover, snipe, curlew, or 'other wild or migratory birds (except wild geese).'	Jan. 12–Sept. 16.
Northwest Territories. (1899.)	Deer, elk, moose, caribou, antelope	Dec. 15–Nov. 1.
	Mountain sheep, mountain goat	Dec. 15–Oct. 1.
	Buffalo	At all times.
	Big game in southeastern Assiniboia (see p. 37)	Until Oct. 1, 1906.
	Grouse, partridge, prairie chicken	Dec. 15–Sept. 15.
	Snipe, sandpiper, wild duck	May 5–Aug. 23.

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[1] For sale seasons see p. 56.

[2] Except July 16–Oct. 1.

[3] May be closed for any locality by stipendiary magistrate.

Close seasons—Continued.

Provinces.	Kinds of game.	Close seasons.
Unorganized Territories (Keewatin, etc.).[2] (1894.)	Deer, elk or wapiti, caribou, mountain sheep, mountain goat	Apr. 1–Dec. 1.[1]
	Musk ox	Mar. 20–Oct. 15.
	Grouse, pheasant, partridge, prairie chicken	Jan. 1–Sept. 1.
	Duck, goose, swan	Jan. 15–Sept. 1.
Nova Scotia (1896.)	Red deer, elk	Until 1904.
	Moose, caribou (except in Cape Breton, until Sept. 15, 1905)	Jan. 1–Sept. 15.
	Rabbit, hare (except jack rabbit and Newfoundland hare, which are protected at all times).	Feb. 1–Oct. 1.
	Spruce partridge, sharp-tailed grouse, ptarmigan, blackcock, capercailzie, 'chukor' partridge, pheasant.	At all times.
	Canada and ruffed grouse (partridge)	Until Oct. 1, 1901.
	Woodcock, snipe, teal, blue-winged duck, wood duck	Mar. 1–Sept. 1.
Ontario[3] (1900.)	Deer (young protected at all times)	Nov. 16–Nov. 1.[4]
	Moose, caribou, or reindeer	Until Nov. 1, 1903.
	Elk or wapiti	At all times.
	Hare,[5] squirrel (black or gray)	Dec. 16–Sept. 15.
	Quail	Dec. 16–Oct. 15.
	Grouse, woodcock, plover, snipe, rail, other 'shore' birds or 'waders.'	Dec. 16–Sept. 15
	Wild turkey	Until Oct. 15, 1905.
	Prairie fowl, English and Mongolian pheasants	Until Sept. 15, 1905.
	Dove	At all times.[6]
	Goose, swan	May 1–Sept. 15.
	Ducks and 'other waterfowl' (except geese and swans)	Dec. 16–Sept. 1.
	Game and game birds not otherwise provided for	Dec. 16–Sept. 15.
Quebec[3] (1899.)	*Zone 1.*[7] Deer, moose (see exceptions)	Jan. 1–Sept. 1.
	Exceptions: In Ottawa and Pontiac counties Dec. 1–Oct. 1	
	Cow moose and fawns	At all times.
	Caribou (fawns protected at all times)	Feb. 1–Sept. 1.
	Hare	Feb. 1–Nov. 1.
	Bear	July 1–Aug. 20.
	Birch, or swamp partridge	Dec. 15–Sept. 1.
	White partridge or ptarmigan	Feb. 1–Nov. 1.
	Plover, woodcock, snipe, curlew, tatler, sandpiper	Feb. 1–Sept. 1.
	Bufflehead or pied duck	Apr. 15–Sept. 1.
	Widgeon, teal, wild duck (except sheldrake—except east and north of counties of Bellechasse and Montmorency, June 1–Aug. 1).	Mar. 1–Sept. 15.
	Zone 2. Close seasons same as in Zone 1, except as follows:	
	Caribou	Mar. 1–Sept. 1.
	Hare	Mar. 1–Oct. 15.
	Birch or swamp partridge	Feb. 1–Sept. 15.
	White partridge or ptarmigan	Mar. 1–Nov. 15.

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[1] Except July 15–Oct. 1.

[2] Indians, inhabitants, and travelers, explorers, and surveyors in need of food exempt.

[3] For sale seasons, see p. 56.

[4] Persons who put or breed deer on their own lands, and their licensees, may hunt such deer Oct. 1–Nov. 16.

[5] Cottontail rabbits (wood hares) may be killed during close season by other means than shooting.

[6] Under Act for Protection of Insectivorous Birds, Rev. Stats. 1897, chap. 289, sec. 3.

[7] Zone No. 1 comprises the whole Province, except that part of the counties of Chicoutimi and Saguenay east and north of the river Saguenay. Zone No. 2 comprises the part of said counties east and north of the Saguenay.

GAME PROTECTED FOR A TERM OF YEARS.

The right of the State to prohibit absolutely the killing of game has been upheld by the Supreme Court of the United States,[1] and is now generally recognized. Two conditions are considered necessary to justify the complete withdrawal of open seasons for several years—(1) when game has been killed off to such an extent that a period of recuperation is required to save it from extermination, and (2) when game is introduced into a new locality and time is needed for it to become established amid new surroundings. The first condition is chiefly exemplified in the case of big game; the second in the case of introduced game birds.

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[1] Geer *v.* Connecticut, 161 U. S. 529.

Big game.—The big game of the United States is rapidly disappearing. Buffalo are almost extinct; elk, moose, caribou, antelope, mountain sheep, and mountain goats are now found in only a few States, and deer are rare in many places where they should be common. To such an extent has this decrease advanced that vigorous measures are now necessary to prevent absolute extermination of several of the species, and, with the exception of deer, big game has been very generally accorded protection for several years to come. To this end legislation has been enacted prohibiting slaughter for hides, materially shortening open seasons, limiting the number of individuals which may be killed, forbidding sale and shipment at all times, and prohibiting shooting indefinitely or for a term of years.

The effect of such measures is well shown in the case of deer in Vermont. One hundred years ago deer were common, but seventy-five years of lax protection nearly exterminated them in the central and southern parts of the State. A continuous close season was then established, which remained in force until 1896. In that year an open season for the month of October was provided, which in 1898 was reduced to the last ten days of October. Fostered by these and other stringent protective laws, deer have increased during the last quarter of a century until at present they have become abundant, and complaints are sometimes made of the damage which they cause to crops.[1]

During the present year all big-game hunting has been prohibited in Nevada, New Hampshire, and New Mexico; close seasons for deer have been established or extended in Connecticut, Indiana, and Illinois; elk have been protected for a term of years in Michigan, Minnesota, and Nebraska; antelope in Arizona, Montana, and South Dakota, and moose and caribou in Montana. As shown in the following table, 28 States and 4 Provinces now prohibit killing of all or certain kinds of big game:

Big Game protected for a term of years.

States.	Deer.	Elk.	Moose.	Caribou.	Antelope.	Mountain sheep.
Maine				To Oct. 15, 1905.		
New Hampshire	Indefinitely.	Indefinitely.	Indefinitely.	Indefinitely.		
Vermont			Indefinitely.	Indefinitely.		
Massachusetts	To Nov. 1, 1903.					
Rhode Island	To Feb. 1, 1905.					
Connecticut	To June 1, 1911.					
New York		Indefinitely.	Indefinitely.	Indefinitely.	Indefinitely.	
New Jersey	Indefinitely.					
Michigan		To 1911	To 1911	To 1911		
Indiana	Indefinitely.					
Illinois	To May 10, 1906.					
Minnesota		Indefinitely.				
Iowa	Indefinitely.	Indefinitely.				
Nebraska		Indefinitely.				

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[1] See Titcomb, Shooting and Fishing, Vol. XXX, p. 289, July 25, 1901.

Big Game protected for a term of years—Continued.

States.	Deer.	Elk.	Moose.	Caribou.	Antelope.	Mountain sheep.[1]
South Dakota					To Jan. 1, 1911.	
North Dakota		Indefinitely.	Indefinitely.	Indefinitely.	To Jan. 1, 1911.	Indefinitely.
Montana			Indefinitely.	Indefinitely.	Indefinitely.	Indefinitely.
Wyoming			To Sept. 1, 1902.			
Colorado						Indefinitely.
Texas					To May 27, 1902.	
Oklahoma	Indefinitely.				Indefinitely.	
New Mexico	To Mar. 19, 1906.	To Mar. 19, 1906.			To Mar. 19, 1906.	To Mar. 19, 1906.
Arizona		Indefinitely.			To Jan. 1, 1906.	Indefinitely.
California		Indefinitely.			Indefinitely.	Indefinitely.
Nevada	To Mar. 28, 1903.	Indefinitely.		Indefinitely.	To Mar. 28, 1903.	Indefinitely.
Utah		Indefinitely.			Indefinitely.	Indefinitely.
Idaho			To 1904.	To 1904.		
Oregon		To Sept. 15, 1904.				
Assiniboia (SE. part).[2]	To Oct. 1, 1906.	To Oct. 1, 1906.	To Oct. 1, 1906.	To Oct. 1, 1906.	To Oct. 1, 1906.	To Oct. 1, 1906.
Ontario		Indefinitely.	To Nov. 1, 1903.	To Nov. 1, 1903.		
Nova Scotia	To 1904.	To 1904.				
Newfoundland		To Jan. 1, 1906.	To Jan. 1, 1906.			

[1] Mountain goats are protected indefinitely in New Mexico, Arizona, and Nevada.

[2] South of township 23 and east of range 24 west of the second meridian. In other words, approximately that part of Assiniboia east of Pasqua Junction and south of the Qu'Appelle River.

Besides these restrictions, both does and fawns are very generally protected, and in Nebraska and Vermont deer without horns are protected at all times. In 7 States and 2 Canadian Provinces the open season for deer has been reduced to 30 days or less; in Arizona, Pennsylvania, and Quebec (Pontiac and Ottawa counties) to 30; Michigan 23, North Dakota 21, Minnesota and Wisconsin 20, Ontario 15, and Vermont 10, while the open season for elk in Colorado is reduced to 12, for moose and caribou in Minnesota to 5, and for deer on Long Island to only 4 days.

In view of the extent of the protection accorded big game, it is interesting to note where hunting is still permitted. In Canada big game is more abundant than in the United States, and except in Ontario and part of Assiniboia most of the species can be killed wherever they occur. Aside from deer, which are now protected in 11 States, big game may be killed in this country in only 12 States and Territories. The number which may be killed is limited and export is prohibited in practically all the States where such game occurs. West of the Mississippi elk can be killed only in South Dakota, Montana, Wyoming, Colorado, Idaho, and Washington; moose in Minnesota, Oregon, and Alaska; caribou in Minnesota and Alaska; antelope in Nebraska, Wyoming, Colorado, Idaho, and Washington; mountain sheep in South Dakota, Wyoming, Idaho, Washington, Oregon, and Alaska; and mountain goats in Montana, Wyoming, Idaho, Washington, and Alaska. The States and Provinces in which big-game hunting is still permitted (arranged geographically for ready comparison), the open seasons and the limitations as to number, are shown in the following table:

Open seasons for Big Game (except deer).

States.	Species.	Open season.	Length of season in days.	Number that may be killed in one year.
Maine	Moose	Oct. 15–Dec. 1	47	1
Pennsylvania	Elk	Nov. 1–Dec. 1	30	....
Minnesota	Moose, caribou (males)	Nov. 16–20	5	[1] 1
Nebraska	Antelope (with horns)	Aug. 15–Nov. 16	93	2
South Dakota	Elk, buffalo, sheep	Nov. 1–Jan. 1	61	[1] 1
Montana	Elk	Sept. 1–Nov. 1	61	2
	Goat	Sept. 1–Jan. 1	122	6
Wyoming	Elk, antelope, sheep, goat	Sept. 1–Dec. 1	91	(3)
Colorado	Elk (with horns)	Oct. 25–Nov. 6	12	1
	Antelope (with horns)	Aug. 15–Nov. 6	83	2
Idaho	Elk	Sept. 1–Dec. 1	91	2
	Antelope, sheep, goat	Sept. 1–Jan. 1	122	4
Washington	Elk, moose, antelope	Sept. 1–Nov. 1	61	[1] 1
	Caribou, sheep, goat	Sept. 1–Nov. 1	61	[1] 2
Oregon	Moose, sheep	Aug. 15–Nov. 1	78	....
Alaska	Moose, caribou, sheep, goat	....	....	....
British Columbia	Elk, moose	Sept. 1–Jan. 1	122	[1] 2
	Caribou	Sept. 1–Jan. 1	122	5
	Sheep, goat	Sept. 1–Dec. 15	106	[4] 3–5
Northwest Territories.	Elk, moose, caribou, antelope	Nov. 1–Dec. 15	44	[1] 3
	Sheep, goat	Oct. 1–Dec. 15	75	....
Unorganized Territories	Elk, caribou, sheep, goat	July 15–Oct. 1 Dec. 1–Apr. 1	199	....
Manitoba	Elk, moose, caribou, antelope	Sept. 15–Dec. 1	77	[2] 2
Quebec	Moose	Sept. 1–Jan. 1[5]	122	1
	Caribou	Sept. 1–Feb. 1[5]	153	2
New Brunswick	Moose, caribou	Sept. 15–Jan. 1	108	(6)
Nova Scotia[7]	Moose, caribou	Sept. 15–Jan. 1	108	[1] 2
Newfoundland	Caribou	Oct. 21–Feb. 1 July 16–Oct. 1	180	[8] 7

[1] Of each.
[2] Altogether.
[3] 2 elk, 3 antelope, 1 sheep, 1 goat in one season.
[4] 3 sheep, 5 goats.
[5] Season extends one month longer in Zone 2.
[6] Number named in license.
[7] Except Cape Breton.
[8] Maximum allowed.

Birds.—In the case of game birds the necessity for absolute protection is not so apparent, and close seasons extending over several years have been accorded to comparatively few species. The terms usually vary from 2 to 10 years, and are renewed when necessary. The Province of Ontario has a provision which authorizes the Lieutenant-Governor-in-Council to prohibit the hunting or sale of any game animal or non-migratory game bird in need of greater protection than is provided by statute.[1] This prohibition may be made for any year or any season. A measure of this kind is a valuable safeguard in case the legislature fails to grant close seasons for introduced game birds or in cases where the close terms expire between legislative sessions.

Six States and British Columbia have now withdrawn open seasons for quail, 4 States and Ontario those for wild turkeys. Doves are protected indefinitely in 15 States and in 2 Provinces of Canada, mainly because they are not regarded as legitimate game.

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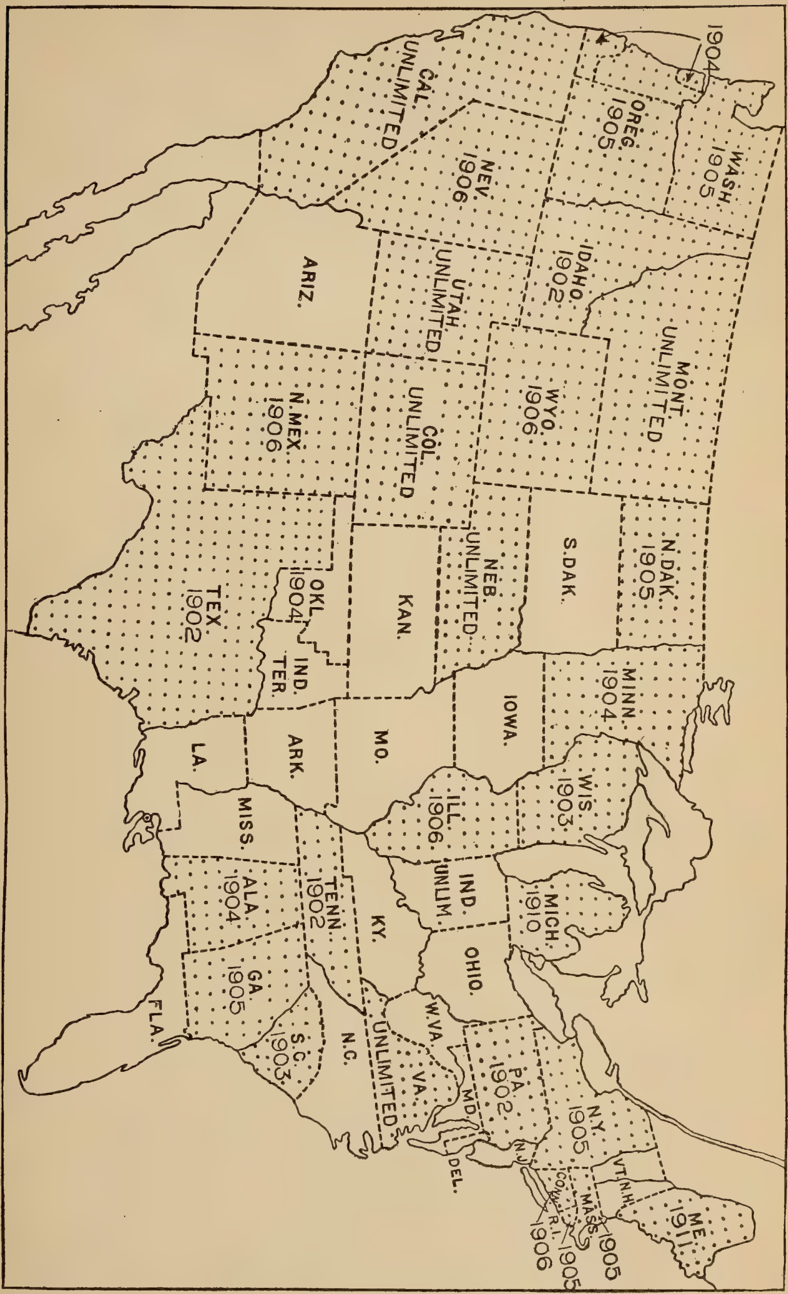
[1] Game protection act, 1900, sec. 7.


WASH.
1905
1904
OREG.
1905
CAL.
UNLIMITED
NEV.
1906
IDAHO.
1902
MONT.
UNLIMITED
UTAH.
UNLIMITED
ARIZ.
WYO.
1906
COL.
UNLIMITED
N.MEX.
1906
N.DAK.
1905
S.DAK.
NEB.
UNLIMITED
KAN.
OKL.
1904
IND.
TER.
TEX.
1902
MINN.
1904
IOWA.
MO.
ARK.
LA.
WIS.
1903
ILL.
1906
MISS.
MICH.
1910
IND.
UNLIM.
KY.
TENN.
1902
ALA.
1904
GA.
1905
FLA.
OHIO.
W.VA.
N.C.
S.C.
1903
VA.
UNLIMITED
PA.
1902
MD.
DEL.
N.J.
N.Y.
1905
VT.
N.H.
ME.
1911
MASS.
1905
CONN.
R.I.
1905
1906

STATES (DOTTED) WHICH PROTECT INTRODUCED PHEASANTS FOR A TERM OF YEARS.

For details, see page 39.

Pheasants and other foreign game birds are almost always given a close season of several years after introduction. They are protected in 30 States (see Pl. IV). In Oregon, so far as the ring-neck pheasant is concerned, this protection is confined to the region east of the Cascades and some of the counties in the western part of the State, but several other pheasants are protected in all the counties. Protection without limit is in force in California, Colorado, Indiana, Montana, Nebraska, Utah, British Columbia, New Brunswick, Nova Scotia, and some of the counties of Virginia. The periods expire in 1902 in Idaho, Pennsylvania, Tennessee, and Texas (thus leaving the birds without protection for nearly a year, as the legislatures do not meet in these States until 1903); in 1903 in South Carolina and Wisconsin; in 1904 in Alabama, Minnesota, and Oklahoma; in 1905 in Georgia, Massachusetts, New York, North Dakota, Oregon, Washington (east of the Cascades), Rhode Island, and Ontario; in 1906 in Connecticut, Illinois, Nevada, New Mexico, and Wyoming; in 1910 in Michigan, and in 1911 in Maine. These terms of protection are shown in the following table:

Game birds protected for a term of years.

States.	Quail.	Wild turkey.	Dove.	Introduced pheasant.
Maine			Indefinitely	To Mar. 22, 1911.
New Hampshire			do	
Vermont			do	
Massachusetts			do	To 1905.
Rhode Island			do	To Oct. 1, 1905.
Connecticut			do	To June 1, 1906.
New York			do	To 1905.
Pennsylvania				To May 27, 1902.
Delaware			Indefinitely	
District of Columbia			do	
Virginia				Indefinitely.[1]
West Virginia			Indefinitely	
Michigan		To 1910	do	To 1910.
Indiana		Indefinitely		Indefinitely.
Illinois				To May 10, 1906.
Wisconsin	To Sept. 1, 1903		Indefinitely	To Sept. 1, 1903.
Minnesota				To Sept. 1, 1904.
Iowa			Indefinitely	
Nebraska	To Nov. 1, 1903	Indefinitely		Indefinitely.
North Dakota				To Sept. 1, 1905.
Montana	Indefinitely			Indefinitely.
Wyoming			Indefinitely	To Sept. 1, 1906.
Colorado	Indefinitely			Indefinitely.
South Carolina				To Dec. 22, 1903.
Georgia				To Nov. 30, 1905.
Alabama				To Feb. 8, 1904.
Tennessee				To Mar. 13, 1902.
Arkansas			Indefinitely	
Texas				To May 27, 1902.
Oklahoma				To Jan. 1, 1904.
New Mexico				To Mar. 14, 1906.
California				Indefinitely.
Nevada				To Sept. 1, 1906.
Utah	Indefinitely			Indefinitely.
Idaho				To 1902.
Washington	To 1903			To Aug. 15. 1905.[2]
Oregon		To Oct. 1, 1905		To Oct. 1, 1905.[3]
British Columbia	Indefinitely			Indefinitely.
Manitoba			Indefinitely	
Ontario		To Oct. 15, 1905	do	To Sept. 15, 1905.
New Brunswick				Indefinitely.
Nova Scotia				Do.

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[1] Certain counties only.
[2] East of Cascades.
[3] Does not include the ring-neck pheasant in some of the counties west of the Cascades, for which an open season has been provided.

RESTRICTIONS AS TO METHODS OF HUNTING.

Restrictions on methods of hunting are exceedingly numerous, and apply not only to the use of guns, boats, and dogs, but also to time, place, and conditions governing the killing of game. An attempt is here made to bring together the more important and more general of these restrictions and to group them in logical order. A somewhat arbitrary division has been adopted by placing the prohibitions under two main headings: (1) Restrictions on outfits or implements for hunting, including guns, ammunition, boats, blinds and other deceptive devices, lights for night hunting, dogs, ferrets, and weasels; (2) restrictions surrounding hunting, such as trapping, netting and snaring, night shooting, and killing game in snow. Limits placed on bags and requirements regarding licenses, although properly belonging to this general subject, are of enough importance to warrant separate consideration.

OUTFITS.

Restrictions on guns relate chiefly to size. A number of States prohibit the use of swivel or pivot guns in the killing of wild fowl, and many limit the size of the gun that may be used for shooting any game. The term 'big gun' as used in this connection may be defined as a gun larger than No. 10, except in the Provinces of Ontario and Quebec, where the maximum legal size is No. 8. Under restrictions on boats, four divisions are made: (1) Boats propelled by naphtha, gasoline, oil, steam, electricity, or similar motive power; (2) sailboats; (3) sneak boats, used in wild-fowl shooting, and (4) skiffs. Under the head of deceptive devices are included batteries, sink boxes, sink boats, sunken punts, bough houses, blinds, and all other kinds of stationary or floating ambush, whether on shore or in the water. Under the head of artificial light are included in two columns restrictions on the hunting of big game with lights, or 'jacking,' as it is commonly called, and laws prohibiting the use of fire or light of any kind in the hunting of wild fowl. The prohibitions in regard to the use of dogs are arranged under three heads: Hounding, practicing, and permitting to run at large. While hounding strictly relates to the chasing of deer and other big game, the term is here used to include also the hunting of birds with dogs. Under practicing are grouped restrictions against the use of dogs in close season, chiefly in training them to hunt birds.

The restrictions against permitting dogs to run at large are such as relate to allowing them to roam in localities where they may disturb game. In Idaho, Maine, New Hampshire, and Vermont the possession of deerhounds within the State is made unlawful, and New York prohibits their possession in Adirondack Park. The use of ferrets and weasels in hunting rabbits and hares is interdicted in a few States.

CONDITIONS.

Trapping, snaring, and netting are prohibited by many States, which recognize that these methods cause rapid extermination of game. Commission houses sometimes encourage the trapping of quail, as the game is in better condition for sale when trapped than when shot; but this is very properly discountenanced, and some States make it an offense to offer for sale birds which show no evidence of having been taken otherwise than by trapping. Several States specifically prohibit the use of grain or other food that has been soaked in opium or other narcotics, or in poison, for the purpose of stupefying or killing birds. Night shooting is treated under two heads—big game and water fowl. In the different laws night is variously defined, but it usually is designated as from one hour after sunset to one hour before sunrise. Killing in the snow includes what is known as 'crusting' big game, or shooting it when it is 'yarded,' and tracking and shooting rabbits and upland birds when the ground is snow covered. The various restrictions, both in regard to outfits and concerning conditions of hunting, are shown in the following table:

Prohibited methods of hunting.

[Crosses (×) indicate simple prohibitions; figures indicate qualified prohibitions, as explained in the corresponding footnotes.]

States.	Guns.		Boats.				Deceptive devices.		Artificial light.		Dogs.			Ferrets and weasels.	Traps, nets, and snares.	Drugged or poisoned food.	Killing at night.		Killing in snow.	
	Big guns.	Swivel guns.	Steam launches, etc.	Sailboats.	Sneak boats.	Skiffs.	Batteries, sink boxes, etc.	Blinds.	Big game.	Wild fowl.	Hounding.	Practicing.	Allowing at large.				Big game.	Water fowl.	Big game.	Rabbits and upland birds.
Alabama															1					
Arizona	×																			
Arkansas												36								
California												36						×		
Colorado	×										42						×	×		
Connecticut	×		×	×			2							3	24			×		
Delaware	×	×								×								4		×
Dist. Columbia	×									×					5			×		
Florida									×						6					
Georgia															7					
Idaho											×									
Illinois		×	×	×	34		34	34												
Indiana			8	8	8	8												×		
Iowa	×	×			×		×	×		×						×	9	9		
Kansas																				
Kentucky																				
Louisiana																				
Maine									×	×	×				×					
Maryland	×	10												×	1			×		
Massachusetts		×	×							×				×						

Prohibited methods of hunting—Continued.

States.	Guns.		Boats.				Deceptive devices.		Artificial light.		Dogs.			Ferrets and weasels.	Traps, nets, and snares.	Drugged or poisoned food.	Killing at night.		Killing in snow.	
	Big guns.	Swivel guns.	Steam launches, etc.	Sailboats.	Sneak boats.	Skiffs.	Batteries, sink boxes, etc.	Blinds.	Big game.	Wild fowl.	Hounding.	Practicing.	Allowing at large.				Big game.	Water fowl.	Big game.	Rabbits and upland birds.
Michigan	×	×	×	....	....	....	×	....	×	....	×	*11*	....	....	×	×	....	×	....	....
Minnesota	×	×	....	....	....	....	×	....	×	×	×	....	....	....	....	....	*9*	*9*	....	....
Mississippi	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	....	....	×	....	....	×	....	....
Montana	....	....	....	....	....	....	....	....	....	....	×	....	....	....	*12*	....	....	....	....	....
Nebraska	×	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	×	×	....	....
Nevada	×	....	....	....	....	....	....	....	....	....	×	....	....	....	....	....	....	....	....	....
New Hampshire	....	....	....	....	....	....	....	....	×	....	×	....	....	×	*14*	....	....	....	....	....
New Jersey	×	....	×	×	*2*	*2*	*2*	....	....	....	....	....	*15*	....	*1*	....	....	×	....	×
New Mexico	....	....	....	....	....	....	....	....	....	....	....	....	....	....	*1*	....	....	....	....	....
New York	×	....	×	*16*	×	....	*17*	*2*	*18*	....	*19*	....	×	*20*	×	....	×	×	×	....
North Carolina	×	....	....	....	....	....	*21*	*21*	....	×	....	....	....	....	....	....	....	×	....	....
North Dakota	×	×	....	....	....	....	×	....	....	×	×	....	....	....	×	×	....	....	....	....
Ohio	×	×	×	×	×	×	×	....	....	....	....	....	....	....	....	....	....	×	....	....
Oklahoma	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Oregon	×	×	*22*	*22*	×	*22*	×	*2*	....	×	×	....	....	....	....	×	×	×	....	*23*
Pennsylvania	....	×	×	×	....	....	×	×	×	×	×	....	....	×	*1*	....	....	....	....	....
Rhode Island	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
South Carolina	....	....	....	....	....	....	....	....	×	×	....	×	....	....	....	....	....	....	....	....
South Dakota	×	×	....	....	....	....	×	....	....	×	×	....	....	....	*24*	×	....	....	....	....
Tennessee	....	....	....	....	....	....	....	....	×	....	....	*25*	....	....	....	....	*26*	....	....	....
Texas	×	....	....	....	....	....	....	....	×	....	....	....	....	....	*27*	....	....	....	....	....
Utah	....	....	....	....	×	....	×	....	....	....	×	....	....	....	*28*	....	....	×	....	....
Vermont	....	....	....	....	....	....	....	....	×	×	×	....	×	....	×	....	....	*29*	×	....
Virginia	×	....	....	....	....	*30*	*30*	....	....	×	....	×	....	....	....	....	....	*31*	....	....
Washington	×	×	....	....	×	....	×	*32*	×	×	*33*	....	*33*	....	*42*	....	....	×	....	....
West Virginia	....	×	....	....	×	....	....	....	....	....	×	....	....	×	....	....	....	....	....	....
Wisconsin	×	×	×	×	×	*34*	*34*	*34*	×	....	*35*	....	....	×	*36*	....	×	×	....	....
Wyoming	×	....	....	....	....	....	....	....	....	....	×	....	....	....	×	....	....	....	....	....
British Columbia	....	*37*	....	....	....	....	*37*	....	....	....	×	....	....	....	....	....	×	×	....	....
Manitoba	....	×	....	....	....	....	×	....	....	×	....	....	*38*	....	×	×	×	×	....	....
New Brunswick	×	×	....	....	....	....	....	....	×	×	×	....	....	....	×	....	....	....	....	....
Newfoundland	....	....	....	....	....	....	....	....	....	....	×	....	....	....	....	....	....	....	....	....
Northwest Ter	....	×	....	....	....	....	×	....	....	×	....	....	....	....	....	*40*	....	....	....	....
Nova Scotia	....	....	....	....	....	....	....	....	....	....	*41*	*39*	....	....	....	....	....	....	....	....
Ontario	×	×	×	×	....	....	×	....	....	....	....	....	*38*	....	....	....	×	×	×	....
Quebec	×	....	....	....	....	....	....	....	....	....	*43*	....	*38*	....	....	....	....	×	×	....

1, Killing by other means than shooting with a gun. *2*, More than a short distance from shore or natural cover. *3*, Until October 15, 1905. *4*, Ducks, on the marshes. *5*, Birds; possession of trap, net, or snare also prohibited. *6*, Quail, except on one's own premises. *7*, Baiting doves prohibited. *8*, No boat allowed except rowboat or push boat. *9*, From boat, etc., on waters of State. *10*, Possession and sale for purpose of shooting wild fowl also prohibited. *11*, Except on birds fifteen days before opening of shooting season, but firearms must not be carried at the time. *12*, Buffalo, elk, moose, and mountain sheep. *13*, Quail; until November 1, 1903. *14*, Deer, quail, partridge, grouse. *15*, In localities frequented by rabbits or game birds during close season for rabbits, unless in custody of owner. *16*, Except in Long Island Sound and Gardiner and Peconic bays. *17*, Except in Long Island Sound and Shinnecock, Gardiner, and Peconic bays, and except from September 30 to October 20, in Great South Bay west of Smiths Point. *18*, Until August 15, 1902. *19*, Except on Long Island. *20*, In any county where there is a close season for hares and rabbits. *21*, Except on land, and except one stationary blind in Currituck Sound at night. Applies only to nonresidents shooting in New Hanover, Brunswick, Currituck, and Dare counties (not applicable to licensed nonresidents shooting in certain waters of Dare County). *22*, All boats prohibited on the Columbia River and its tributaries except the Willamette River and its tributaries above Oregon City. *23*, Prairie chickens in Wasco County only. *24*, Birds. *25*, Only in Anderson, Claiborne, Campbell, Cocke, McNairy, Morgan, Scott, and Union counties. *26*, Deer and other animals. *27*, Taking quail or partridge with a net; or duck or goose, except with a gun. *28*, Partridge, pheasant, grouse, prairie chicken, dove, during close season; quail, pinnated grouse, imported pheasants, at all times. *29*, Wild fowl, on their feeding grounds. *30*, In Fairfax, Prince William, Stafford, King George, and Henrico counties; applies only to nonresidents of the State. *31*, Except from land; does not apply to goose. *32*, In water? *33*, Except October 1 to November 1, west of Cascades. *34*, In open water. *35*, Except upland birds, under license. *36*, Deer. *37*, In non-tidal waters. *38*, During close season in localities where deer are found. *39*, Hares. *40*, Wild fowl, except goose. *41*, Moose and caribou. *42*, Big game only. *43*, Except red deer October 20 to November 1.

In addition to these restrictions there are numerous others which are too local to find a place in the table. Colorado and Nebraska prohibit the use of steel or hard-pointed bullets. North Carolina prohibits the use of decoys for wild fowl in Currituck Sound from March 31 to November 10; Ontario requires that they shall be placed more than 75 feet from shore or natural cover, and Quebec prohibits leaving them at night near a cache, boat, or bank. Three States—Washington, Maryland, and North Carolina—specifically prohibit disturbing wild fowl on their bedding or feeding grounds. North Carolina has numerous other provisions relating to the hunting of wild fowl in Currituck County, such as leaving landing or anchorage or putting out decoys before sunrise, boating on Currituck Sound on Sunday to locate wild fowl for a future day, remaining near citizens who are shooting, with the purpose of interfering with their sport, and skiffing and ring-shooting boobies and ruddy ducks during the period from November 10 to February 15. New York, Connecticut, and Manitoba make it unlawful to place any traps where birds may be caught and provide that traps may be destroyed by anyone. Michigan and Manitoba prohibit the use of baited hooks in taking game, and Michigan also proscribes the use of any pit, pitfall, deadfall, scaffold, cage, or any similar device in hunting. Connecticut, Michigan, and Missouri find it necessary to provide against the use of explosives in the taking of certain game, wild turkeys and geese being specified in the Missouri law and gray squirrels and rabbits in the Connecticut law. Connecticut also forbids the use of fire, sulphur, and brimstone by squirrel or rabbit hunters. In Alabama, Pennsylvania, Wisconsin, and Ontario (in the Indian Peninsula) it is unlawful to kill big game while it is in the water, and in Wisconsin also while it is on the ice. North Dakota, Washington, Wisconsin, and Manitoba prohibit spring-guns.

Shooting from a highway is prohibited by five States—Colorado, Iowa (quail), Nebraska, New York, and West Virginia. New York also prohibits shooting from the lands of any railway or lands purchased or condemned for the Croton aqueduct in Westchester County; and West Virginia has a prohibition against shooting on another's land, near occupied dwellings. Nonresidents hunting in Maine, South Dakota, and Wyoming must be accompanied by guides, and in the last two States it is required that these guides be deputy game wardens. In the use of guides a distinction is generally made between residents and nonresidents, the employment of the latter being often possible only on payment of a license fee; while in Newfoundland it is specifically prohibited. Ontario prohibits shooting for hire or hiring any one to shoot, but declares that this is not intended to interfere with the bona fide employment of a guide. Restrictions intended to prevent the waste of game that has been legitimately killed are imposed by a few States. Colorado prohibits using game for bait, Colorado and

Quebec forbid wasting game, and Nova Scotia requires hunters who kill moose or caribou to carry the flesh out of the woods within ten days.

Shippers and carriers, no less than sportsmen, are directly concerned in the foregoing provisions of the laws of the various States and Territories, as the Lacey Act prohibits, under heavy penalty, interstate commerce in game killed in violation of law. Game killed by illegal methods can no more be shipped from State to State than that taken out of season.

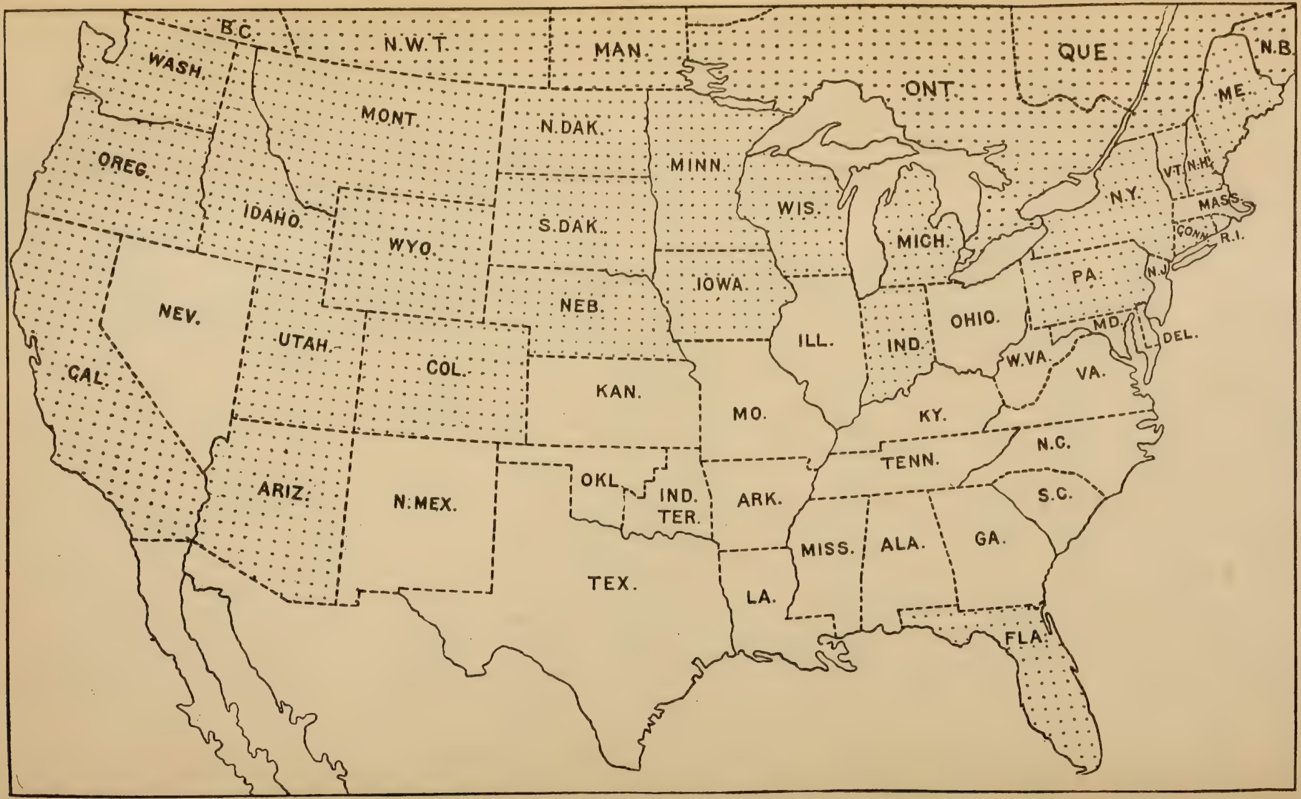
LIMITS OF GAME BAGS.

Twenty-four States have attempted to prevent wanton destruction of game by limiting the amount which may be killed in a day or season. These States comprise the northern tier, from Maine to Washington, and Connecticut, Pennsylvania, Florida, Indiana, Iowa, South Dakota, Nebraska, Wyoming, Colorado, New Mexico, Arizona, Utah, California, and Oregon. (See Pl. V.) Similar restrictions are common in the Canadian laws. Limits as to number have been placed mainly on big game and upland game birds, but in a few cases have been extended to woodcock, rail, and wild fowl. In Colorado, North Dakota, and Nebraska practically all the game of the State is limited, while in Iowa the limit applies to game birds, but not to big game. Michigan, New Hampshire, Utah, and Wisconsin limit only the number of deer, three being allowed each hunter in Michigan and two in New Hampshire, Wisconsin, and Utah. The highest limit for big game is in Montana, where six deer or mountain goats may be killed in a season. The maximum for any species of game bird in a day is 70 sandpipers in Maine, but the usual limit is 25 or 50.

Limits of a similar character and for the same object are also placed by several States on the number of birds which may be shipped at one time or in one season, usually corresponding to the number that may be killed, but seldom, in any event, exceeding 50 at a time. Florida prescribes the limit not only for each person, but also for each party, in order to prevent evasion of the law by several persons hunting together. Thus, four wild turkeys may be killed in a day by one person, but not more than six by a party. The following table shows the details of these restrictions:

Limits of game bags.

States.	Game.	Number.
Arizona	Deer	1 in one day; 3 in a season.
	Quail, duck	25 in one day.
California	Deer	3 in a season.
	Quail, partridge, snipe, curlew, ibis	25 in one day.
	Dove, duck	50 in one day.
	Rail	20 in one day.


B.C.
N.W.T.
MAN.
QUE.
N.B.
WASH.
MONT.
N.DAK.
ONT.
ME.
OREG.
MINN.
V.T.
N.H.
IDAHO.
WIS.
N.Y.
MASS.
S.DAK.
WYO.
MICH.
CONN.
R.I.
PA.
N.J.
IOWA.
NEV.
NEB.
OHIO.
MD.
DEL.
UTAH.
ILL.
IND.
COL.
W.VA.
CAL.
VA.
KAN.
MO.
KY.
N.C.
TENN.
OKL.
S.C.
ARIZ.
IND.
TER.
ARK.
N.MEX.
MISS.
ALA.
GA.
TEX.
LA.
FLA.

STATES (DOTTED) WHICH LIMIT GAME BAGS.

For details, see pages 44–46.

Limits of game bags—Continued.

States.	Game.	Number.
Colorado	Deer, antelope	1 of each or 2 of one kind in a season.
	Elk	1 in a season.
	Duck	50 in one day; 100 in possession at one time.
	Other birds	25 in one day; 50 in possession at one time.
Connecticut	Ruffed grouse	5 in one day; 36 in one year; 36 may be shipped in one year.
	Plover, rail, snipe, shore birds	50 in one day.
Florida	Deer	5 in one year—until Jan. 1, 1905.
	Quail	25 by one person, 50 by one party, in one day.
	Wild turkey	4 by one person, 6 by one party, in one day.
Idaho	Deer, antelope, mountain sheep, mountain goat.	4 in a season.
	Elk	2 in a season.
Indiana	Quail, duck	24 in one day; 24 may be carried out of the State under each nonresident license.
Iowa	Quail, ruffed grouse, pinnated grouse, pheasant, woodcock.	25 in one day or in possession at one time; 12 may be shipped (not for sale or profit) within the State in one day; 25 game birds or animals may be exported under one nonresident license.
Maine	Deer	2 in a season.
	Moose	1 in a season.
	Quail, ruffed grouse, woodcock, plover, snipe, wood duck, dusky duck, teal, gray duck.	15 of each in one day; 15 of any one kind may be transported at one time as the property of one person.
	Sandpiper	70 in one day; 15 may be transported at one time as the property of one person.
Michigan	Deer	3 in one year.
Minnesota	Deer	3 in a season; 3 deer may be shipped within the State by 1 person after Nov. 10.
	Moose, caribou	1 of each in a season.
	Birds	25 in one day.
Montana	Deer, mountain goat	6 in a season.
	Elk	2 in a season.
	Partridge, grouse, prairie chicken, fool hen, sage hen, pheasant, turtle dove.	20 in one day.
Nebraska	Deer, antelope	1 of each or 2 of one kind in a season.
	Sage chicken, prairie chicken, grouse, wild pigeon, dove, plover, jacksnipe, Wilson snipe, yellowlegs, duck, swan, crane.	25 in one day; 50 may be had in possession at one time.
	Goose, brant	10 in one day or in possession at one time.
New Hampshire	Deer	2 in a season.
New York	Deer	2 in a season; only 1 can be transported at a time. Export prohibited.
	Grouse, woodcock	36 in a season; only 12 can be transported at a time. Export prohibited.
North Dakota	Deer	5 in a season.
	Sharp-tailed grouse, ruffed grouse, pinnated grouse, prairie chicken, woodcock, crane, duck, goose, brant.	25 in one day.
Oregon	Deer	5 in a season.
	Quail, grouse, prairie chicken, ringneck pheasant.	10 in one day.
	Duck	50 in one day; 100 in one week.
Pennsylvania	Deer	2 in a season.
	Quail	15 in one day.
	Ruffed grouse, woodcock	10 of each in one day.
	Wild turkey	2 in one day.
South Dakota	Deer	3 in one year.
	Elk, buffalo, mountain sheep	1 of each in one year.
	Quail, ruffed grouse, prairie chicken (pinnated grouse), sharp-tailed grouse, woodcock, plover, curlew, crane, duck, goose, brant.	25 in one day; 25 may be shipped out of State.
Utah	Deer	2 in a season.
	Snipe, duck, goose, brant, swan	40 in one day.
Vermont	Deer	1 in a season; 1 may be transported.
	Quail, English partridge, ruffed grouse, pheasant, woodcock, plover, English snipe, goose.	5 of each in one day.
	Duck	20 in one day.
Washington	Deer	4 in a season.
	Elk, moose, antelope	1 of each in a season.
	Caribou, mountain sheep, mountain goat.	2 of each in a season.
	Partridge, native pheasant, ptarmigan, grouse, prairie chicken, sage hen.	10 in one day.
	Plover, rail, crane, duck, or other waterfowl.	25 in one day.

Limits of game bags—Continued.

States.	Game.	Number.
Wisconsin	Deer	2 in a season; 1 deer may be exported on each of the 2 coupons of license; 50 birds at once may be exported by a resident if accompanied by owner; 50 birds or animals may be exported by a nonresident in one year.
Wyoming	Deer, elk	2 of each in a season.
	Antelope	3 in a season.
	Mountain sheep, mountain goat	1 of each in a season.
British Columbia	Deer	10 in a season.
	Elk, moose	2 of each in a season.
	Caribou, mountain goat	5 of each in a season.
	Mountain sheep	3 in a season.
	Duck	250 in a season.
Manitoba	Deer, elk, moose, caribou, antelope	2 in all in a season.
	Grouse, partridge, prairie chicken, pheasant.	20 in one day; 100 in a season.
New Brunswick	Deer	2 in a season.
	Moose, caribou	Number in a season named in license.
Newfoundland	Caribou	3 stags and 1 doe; under $80 nonresident license 7 in two months.
Northwest Territories.	Deer, elk, moose, caribou	3 of any species in a season (except for food for self or family).
	Grouse, partridge, pheasant, prairie chicken.	20 altogether in a day.
Nova Scotia	Moose, caribou	2 of each in a season.
Ontario	Deer, moose, caribou	In all 2 deer, 1 moose, or 1 caribou in a season.
Quebec.[1] *Zone 1.*	Deer, caribou	2 of each in a season.
	Moose	1 in a season.
Zone 2.	Caribou	4 in a season.

[1] The commissioner of lands, forests, and fisheries may grant permission (on payment of $5) to take 3 additional deer and 3 additional caribou.

LICENSES FOR HUNTING OR SHIPPING GAME.

In some sections of the United States, notably in Missouri, the privilege of hunting is not extended to nonresidents, and in Virginia it is unlawful for nonresidents to kill wild fowl in certain parts of the State.[1] In twenty-one States and everywhere in Canada licenses must be secured before nonresidents may hunt certain game or hunt at all. In nine States and two Canadian Provinces a like restriction is imposed on residents, but the fees are usually very much smaller and often merely nominal. Thus in Nebraska, South Dakota, Washington, and Wisconsin resident licenses cost $1, while nonresident licenses vary from $10 to $25, according to the State; in North Dakota and Michigan the fee for residents is 75 cents, while that for nonresidents is $25. In Minnesota 25 cents and $25 are the respective charges for licenses to shoot big game. In Wyoming the same distinction is observed in the issue of 'gun licenses' for hunting big game, residents being charged a fee of $1 and required to secure licenses only for shooting in counties other than those in which they reside, while nonresidents pay $40 for the privilege of hunting anywhere within the State. Some of the Canadian licenses are even more expensive. Brit-

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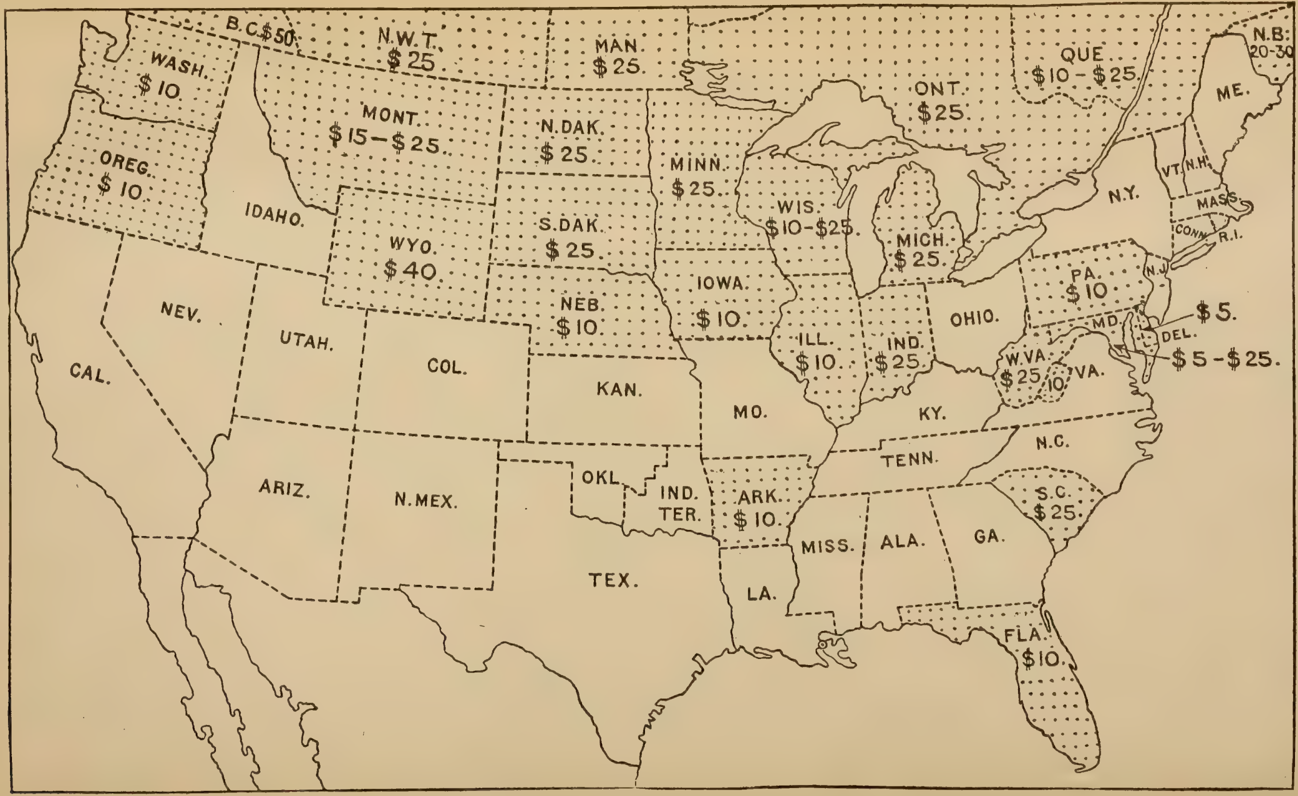
[1] On any waters, marshes, or beaches within the jurisdiction of the State, below the head of tide water (except on Eastern Shore); from skiff or sink box in Fairfax, Henrico, King George, Prince William, and Stafford counties; in Accomac and Northampton counties, unless nonresident is a member of the Eastern Shore Game Protective Association.


B.C. $50.
N.W.T. $25
MAN. $25.
QUE. $10 - $25.
N.B. 20-30
ME.
WASH. $10
MONT. $15 – $25.
N.DAK. $25.
ONT. $25.
OREG. $10.
MINN. $25.
VT.
N.H.
N.Y.
MASS.
IDAHO.
S.DAK. $25.
WIS. $10-$25.
MICH. $25.
CONN.
R.I.
WYO. $40.
PA. $10
N.J.
NEV.
NEB. $10.
IOWA. $10.
$5.
MD.
OHIO.
UTAH.
DEL.
ILL. $10.
IND. $25.
CAL.
COL.
W.VA. $25
10
VA.
$5 - $25.
KAN.
MO.
KY.
N.C.
TENN.
OKL.
IND. TER.
ARK. $10.
S.C. $25.
ARIZ.
N.MEX.
MISS.
ALA.
GA.
TEX.
LA.
FLA. $10.

STATES (DOTTED) WHICH REQUIRE NONRESIDENTS TO OBTAIN HUNTING LICENSES.

The fee for the license is shown in each case. In Arkansas and Oregon licenses are required only in connection with market hunting. For other details, see pages 46–50.

ish Columbia demands $50 for a big-game license and Newfoundland $80 for a special caribou license. Minnesota has a special license with a fee of $25 for nonresidents from States that issue nonresident licenses; these States are shown in the table. (See Pl. VI.)

Licenses are generally issued only for the season, and thus expire at a fixed date. In six States—Florida, Iowa, Maryland, South Dakota, Washington, and West Virginia—they are good only in a single county, and the fees for these county licenses vary from $1 to $25. In Nebraska a resident is required to secure a license to hunt in any county other than that in which he resides. In Maryland there is much variation, as each county is subject to a separate law; Allegany, Anne Arundel, Calvert, Frederick, Montgomery, Washington, Wicomico, and Worcester counties have no license laws. Some of the counties of Maryland and Virginia require nonresidents to secure permission from landowners before hunting, and in North Carolina a general provision (Code of 1883, sec. 2831) prohibits anyone from hunting on lands of another without permission from the owner. Certain counties in North Carolina go farther and require hunters to obtain written permits.[1] Occasionally the hunting privileges covered by these permits are sold to nonresidents in return for payment of taxes on the land or other consideration, and the permit becomes in effect a kind of nonresident license, but with this difference, that it allows shooting only on a certain tract of land instead of in the whole county or State.

In some States licenses are required only for hunting certain kinds of game. Thus in Michigan they are issued only for hunting deer, in Maine for deer and moose, in Florida for deer, quail, and turkeys, and in South Dakota for big game. In part of Dare County, N. C., license fees of $25 are required of club houses before members may shoot wild fowl.[2] In Illinois, Indiana, Iowa, Maine, and Wisconsin licenses carry with them the privilege of shipping out of the State a limited amount of game, but generally require that it shall be properly marked or accompanied by the owner. In Maine dealers are obliged to secure licenses before they can sell deer or buy, sell, or tan deer skins, and in Arkansas[3] and Oregon licenses are issued to nonresident market hunters. Georgia permits its counties to require a

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[1] The following counties require written permission for hunting on lands other than those of the owner: Alexander, Alleghany, Buncombe (birds), Caswell, Clay, Craven, Davidson, Edgecombe, Franklin, Halifax, Henderson, Iredell (birds), Lincoln (birds), Macon, Madison (quail), Mitchell (deer), Orange, Richmond (Steeles Township), Rowan, Scotland, Surry (quail), Wilkes.

[2] But any citizen of the county may obtain a 'nonresidence license' on payment of $10.

[3] Arkansas levies a tax of $10 upon all nonresident trappers, hunters, seiners, or netters of fish who may follow trapping, hunting, seining, or netting of fish in the State. (Mansfield's Digest, secs. 6456–6457.)

$25 license fee of market hunters. Colorado issues storage licenses at $1, importation licenses at $1, and park licenses at $1–$100. California, Colorado, and Oregon issue special permits upon application to the fish commissioners or game wardens, allowing shipment of game out of the State for breeding purposes. It might be well if the practice of issuing permits in the case of birds intended for propagation were more general. It is not in conflict with the spirit of nonexport laws, and under State supervision will hardly interfere with their proper enforcement, while, on the other hand, it may materially assist in obtaining a supply of birds for restocking covers in other States.

Details in regard to nonresident licenses are given in the following table. In a few States an additional clerk's fee, 25 cents to $1, is required to cover cost of issuing the license, but this item is not included in the fees given below.

Licenses for hunting game.

States.	Kind of license.	Fee.	By whom issued.	Remarks.
Arkansas	Nonresident	$10.00	County clerk	
Delaware	Nonresident	5.00	Delaware Game Protective Association.	$2 for each subsequent year.
Florida	Nonresident	10.00	Clerk circuit court of county.	County license for deer, quail, turkeys. Nontransferable.
Georgia		25.00	Ordinary of county	Permits killing deer, quail, doves, and turkeys for sale. Optional with each county.
Illinois	Nonresident	10.00	Secretary of state	Expires June 1. Permits export of 25 birds from State.
Indiana	Nonresident	25.00	Clerk circuit court of county.	Permits export of 24 birds from State. Nontransferable.
Iowa	Nonresident	10.00	County auditor	County license. Expires Jan. 1. Permits export of 25 birds.
Maine	Camp keeper.	5.00	Commissioners of Inland Fisheries and Game.	
	Guide (resident).	1.00	do	
	Guide (nonresident).	$20.00	do	
	Game		do	Moose, $5; deer, $2; pair of game birds, 50 cents. Permits shipping home or to hospital in State.
	Deer sale		do	In cities of more than 3,000 inhabitants, $5; elsewhere, $3; or, per deer, 50 cents.
	Deerskin	5.00	do	Permits buying, selling, or tanning.
Maryland	Nonresident			Baltimore, Caroline, Carroll, Cecil, $10 (wild waterfowl); Charles, $5; Dorchester, Garrett, $25 (nontransferable); Harford, $10; Howard, Kent, $15, if invited by land owner, $5; Prince George, Queen Anne, St. Mary,[1] Somerset, $10 (unless accompanied by resident); Talbot, $9.50.
Michigan	Nonresident	25.00	County clerk	Per season. Permits killing and transporting, but not exporting, deer.
	Resident	.75	do	Do.
Minnesota	Special nonresident.	25.00	Board of game and fish commissioners.	Limited to 1 year. Includes animals and birds, and applies only to citizens of States having restrictive laws against nonresidents.

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[1] Licenses not required for shooting or trapping certain waterfowl on Patuxent in case of citizens of St. Mary, Prince George, Charles, Anne Arundel, and Calvert counties.

License for hunting game—Continued.

States.	Kind of license.	Fee.	By whom issued.	Remarks.
Minnesota	Nonresident	$25.00	County auditor	For 1 year from date of issue. Deer, caribou, elk, and moose.
	Resident	.25	do	Do.
Montana[1]	Nonresident	25.00	State game and fish warden	Deer, elk, moose, mountain goat.
		15.00	do	Game birds.
Nebraska	Nonresident	10.00	Game and fish commissioner.	Permits export of 50 birds. Expires December 31.
	Resident	1.00	do	Necessary outside of county of domicile. Expires Dec. 31.
North Dakota	Nonresident	25.00	County auditor	Expires December 31.
	Resident	.75	do	Expires December 31. Not required for hunting by citizen on his own lands.
Oregon	Market hunting.	10.00	Game and forestry warden	Nonresident. Expires December 31. Nontransferable.
Pennsylvania	Nonresident	10.00	County treasurer	
South Carolina	Nonresident	25.00	do	
South Dakota	Nonresident	25.00	do	County license for big game. Issued Nov. 1. Expires Dec. 31. Nontransferable.
	Resident	1.00	do	Do.
Virginia	Nonresident		Commissioner of revenue	Alleghany, Augusta, Bath, Botetourt, Highland, Rockbridge, $10, not required in case of consent of land owner; Lee, $10 (partridge or quail).
Washington	Nonresident	10.00	County auditor	County license for 1 year. $20 extra for killing elk.
	Resident[2]	1.00	do	County license for 1 year. Not required of persons under 16. May be obtained by residents of Oregon and Idaho.
West Virginia	Nonresident	25.00	Clerk of county court	County license for 1 year.
Wisconsin	Nonresident	25.00	Secretary of state	All game, including deer. Permits export of 2 deer and 50 birds in one year.
	Nonresident	10.00	do	All game except deer.
	Resident	1.00	County clerk	All game. Permits transportation of 2 deer; also 25 upland game birds and 50 snipe or water fowl in one shipment. All licenses nontransferable.
Wyoming	Nonresident	40.00	Justice of the peace	For 1 season. Big game.
	Resident	1.00	do	For 1 season. Big game. Not required for county of residence.
	Export		do	For shipment of carcasses, heads, antlers, scalps, or skins taken in open season.
	Guide	10.00	do	
British Columbia	Nonresident	50.00	Any government agent	Not required of army or navy or members of permanent corps of Canadian militia in actual service.
Manitoba	Nonresident	25.00	Minister of agriculture and immigration.	Any animals or birds.
New Brunswick	Nonresident	30.00	Surveyor-general; chief game commissioner; any game warden.	Any game or game birds.
	Nonresident	20.00	do	Moose and caribou only.
	Resident	2.00	do	Moose and caribou.
	Guide	20.00	do	Nonresident accompanying anyone into woods to hunt moose or caribou.
	Guide	2.00	do	Resident accompanying anyone into woods to hunt moose or caribou.
	Camp help	20.00	do	Nonresident accompanying anyone going into woods to hunt moose or caribou.

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[1] "The Attorney-General of Montana has decided that a nonresident of that State who is a stockholder in a corporation in the State, or who owns other property in the State upon which he pays taxes, can hunt in the State without taking out a nonresident's license; but that if a nonresident holds property in the State upon which he does not pay taxes, he must take out a nonresident's license before he can legally hunt or fish within the State." (Am. Field, Vol. LVI, p. 61, July 27, 1901.)

[2] The Superior Court of Spokane has declared the license law of Washington unconstitutional, so far as it relates to residents of that State, on the ground that it discriminates in favor of persons under 16 years of age. (Am. Field, Vol. LVI, p. 164, Aug. 31, 1901.)

Licenses for hunting game—Continued.

Provinces.	Kind of license.	Fee.	By whom issued.	Remarks.
Newfoundland	Nonresident	$40.00	Stipendiary magistrate; justice of the peace; minister (or deputy) of marine and fisheries; any game warden.	2 stag and 1 doe caribou. Good for 4 weeks. (Fee not required of officer of British warship stationed on coast of Newfoundland for fisheries protection.)
	Nonresident	50.00	do	3 stag and 1 doe caribou. Good for 6 weeks.
	Nonresident	80.00	do	5 stag and 2 doe caribou. Good for 2 months.
	Nonresident guide.	25.00	do	Employment of guide, laborer, or bearer.
Northwest Territories.	Nonresident	15.00	Commissioner of agriculture at Regina.	Expires Dec. 31.
	Guest	1.00	Game guardian	For guests (not residents of adjacent Provinces or States) of residents and hunting with them. Good for 5 days.
Nova Scotia[1]	Nonresident	30.00	Provincial secretary or chief game warden.	All game. Good for 1 year from Aug. 1.
	Nonresident	10.00	do	Birds, hares, and rabbits. Good for 1 year from Aug. 1.
Ontario	Nonresident	25.00	Chief warden	Two licenses may be obtained by 1 hunter on certain conditions.
	Resident	10.00	do	Moose and caribou.
	Resident	2.00	do	Deer.
Quebec	Nonresident	25.00	Commissioner of lands, forests, and fisheries.	General license to hunt.
	Nonresident	20.00	do	Game animals.
	Nonresident	10.00	do	Game birds. Good for season.[2]
	Nonresident	1.50	do	Game birds. Good for 1 day.[2]

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[1] Licenses not required of taxpayers, or of former residents, who are members of the Game and Fishery Protection Society, and in government employ, under certain conditions.
[2] Separate license required for shooting game birds in Gulf of St. Lawrence.

In this connection it may be well to call attention to the Canadian law regarding nonresident hunters. Those who visit Canada for the purpose of hunting, camping, etc., are required to deposit with the customs officer at the port of entry an amount equal to the duty (30 percent of appraised value) on such guns, canoes, tents, cooking utensils, kodaks, etc., as they take with them. If these articles, properly identified, are taken out within six months at the same port at which they were carried in, the deposit will be returned. But members of shooting or fishing clubs that own preserves in Canada and have filed a guarantee with the Canadian commissioner of customs, may present club membership certificates in lieu of making the deposit. They must, however, pay duty on all ammunition and provisions carried in.

RESTRICTIONS AS TO PURPOSES FOR WHICH GAME MAY BE KILLED.

Not only are limits set to the time for killing game and the methods of hunting, but in many instances the killing or possession of game for certain purposes is prohibited. Restrictions of this kind may be conveniently considered under the four heads 'Market hunting,' 'Killing for hides,' 'Possession and storage,' and 'Sale.'

MARKET HUNTING.

Traffic in game, especially since the advent of railroads in the West and the introduction of modern methods of refrigeration, has grown to large proportions, and in several instances threatens with extermination some of the most valuable game in the United States. The amount killed for sport or for food, however large it may be, is small in comparison with that killed for market. With a view to preventing extermination of their game, some States have prohibited killing for sale, and others the sale of all game taken within the State or protected by its laws. Ohio prohibits killing for sale of squirrel, quail, ruffed grouse or pheasant, prairie chicken, wild turkey, Mongolian, English or ring-neck pheasant, and woodcock; Pennsylvania, deer, elk, quail, partridge, grouse, pheasant, wild turkey, and woodcock; Indiana, quail, ruffed grouse, and pinnated grouse; Iowa, these and woodcock; Tennessee, deer, quail or partridge; Wyoming, big game. The Province of Ontario prohibits the employment of any one to kill game for sale; and Nebraska and the Indian Territory the slaughter of game for any purpose except food. In many States that do not absolutely prohibit killing for sale, such killing is greatly restricted by laws requiring hunters to secure licenses, and limiting the number that may be killed (see pp. 44–50). Oregon requires nonresident market hunters to obtain a special license, the fee for which is $10. Georgia has a general law forbidding killing for sale, except under license, but it is not operative in any county until recommended by the grand jury of that county.

KILLING FOR HIDES.

Killing for hides may be regarded as a special phase of market hunting and one which has proved extremely destructive to big game in certain States of the West. Of late years legislation has been directed toward stopping this source of waste. Wyoming prohibits purchase of hides or horns of deer, elk, moose, antelope, mountain sheep, and goat; and in some other States dealers are required to obtain special licenses for handling hides of deer and moose or other big game. (For restrictions on shipment of deer hides see page 60).

POSSESSION AND STORAGE.

One of the most important features of game legislation has been the gradual increase of provisions making the possession of game out of season an offense. Prohibitions against killing can be enforced only against the hunter, who may be merely the agent of the dealer; but penalties for possession can be enforced alike against hunter and dealer, agent and employer. The enforcement of such provisions has given rise to cases which have been carried to the highest courts. Acknowledgment has been slow of the principle that States can impose restrictions on possession of game,[1] or that birds lawfully purchased in open season can become contraband simply by being kept a few days in storage. It is unnecessary here to review the history of this litigation; but reference may be made to a case recently decided by the supreme court of Indiana, in which the appellant was convicted of having in his possession on February 5, 1900, a single quail, which he had obtained lawfully on December 30 previous and had kept in his refrigerator, notwithstanding that the law of Indiana prohibited possession of quail in that State after January 1. In deciding this case the court summarized the whole question briefly in the following words:

> The individual has no natural right to take game, or to acquire property in it, and all the right he possesses or can possess in this respect is granted him by the State. The power to grant embodies the power to impose conditions. . . . . . The citizen when he accepts the State's grant, accepts it impressed with all the restrictions and limitations laid upon it, and when he acquires property under such license he does so with full notice of his qualified right; and so, if he loses that which he has taken, or held possession of, upon forbidden terms, *he has lost nothing that belonged to him*, and there has been no taking of property without due process of law, or without just compensation. (Smith *v.* State, 58 N. E. Reporter, 1045.)

Similar decisions have been rendered in Minnesota (State *v.* Rodman, 58 Minn. 393) and other western States. The supreme court of Missouri has even gone so far as to hold that under a law prohibiting possession during the close season, a contract on the part of a cold-storage company to keep game during the close season is illegal. (Haggerty *v.* St. Louis Ice Co., 44 S. W. 1114.) In Ontario game dealers are licensed, and, in addition to the regular license, are required to obtain a special license at a cost of $25 to keep game in cold storage during the close season.

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[1] Michigan (Acts of 1893, p. 312) and Minnesota (Laws of 1897, p. 413) have declared that birds protected by law shall always remain the property of the State. When their killing is not prohibited, they may be used in the manner and for the purposes authorized, but not otherwise.

The question of the status of imported game has been greatly simplified by the passage by Congress of the Lacey Act; and in this connection attention may again be called to section 5 of that act, which provides that all game imported into any State becomes subject to the operation of the laws of that State (provided they are broad enough to cover it) to the same extent and in the same manner as if produced in that State.

SALE.

Thirty-two States and Territories and 6 Provinces of Canada now prohibit the sale of all or certain kinds of game at all seasons. There has been a steady increase in the prohibitions against sale, and during the past year such provisions have been enacted by Arizona, California, Indiana, Michigan, Minnesota, Missouri, Nevada, New Hampshire, North and South Dakota, and Quebec.

In Arizona, Idaho, Kansas, Michigan, Montana, and Nevada the sale of all game protected by the State law is prohibited. In Massachusetts and New Hampshire the sale of ruffed grouse or partridge, and woodcock is forbidden; in South Dakota, big game; in Minnesota, quail, ruffed grouse, sharp-tailed grouse, prairie chicken, and all aquatic fowl; in California, Washington, and Manitoba, all big game and upland game; and in Ontario, quail, ruffed grouse or partridge, woodcock, and snipe. In some States, after the close of the open season, a few days are allowed in which to dispose of game. Such provisions prevail in Illinois, Iowa, Massachusetts, New Jersey, Ohio, and 5 Provinces of Canada. The right of the State to prohibit dealers from storing or selling game imported from other States has been hotly contested. While there has been diversity of opinion on this point, the majority of the decisions have sustained the State. Such decisions have been rendered in California (*Ex parte* Maier, 103 Cal. 476), the District of Columbia (Javins *v.* U. S., 11 App. D. C. 347), Illinois (Magner *v.* People, 97 Ill. 320), Maryland (Stevens *v.* State, 89 Md. 669), Michigan (People *v.* O'Neil, 68 N. W. Rep. 227), Missouri (State *v.* Judy, 7 Mo. App. 524), New York (Phelps *v.* Racey, 60 N. Y. 10), and in other States.

A decision of the same kind has recently been handed down by the United States circuit court in the district of Oregon.[1] A dealer in Portland had been convicted by the State of selling, contrary to the law of Oregon, certain trout purchased in Seattle, Wash. He was fined, and in default of payment was imprisoned. Application was thereupon made to the Federal court for a writ of habeas corpus, which was denied. In rendering this decision the court cited the case of Geer *v.* Connecticut,[1] and disposed of the question as follows:

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[1] *In re* Deininger, circuit court, district of Oregon, April 17, 1901.

> The decision [Geer *v.* Connecticut] is based upon the fundamental distinction that exists between the qualified ownership in game and the perfect nature of ownership in other property. If game when reduced to possession became an article of property, in the ordinary sense of the word, it would belong to commerce; otherwise, it is a subject of control by the State, in the exercise of its police power. There is, in my opinion, no room to distinguish between the right to take game out of the State and the right to bring it within the State. Interstate traffic is affected as much in one case as in the other. It is not material that in one case the killing of game is discouraged by the limitation which the law puts upon its use, by prohibiting its exportation, while in the other the enforcement of the law against the taking of game is rendered practicable by making its possession for sale unlawful. The ultimate object sought in each case is the same, and the law in each case is a legitimate exercise of the police power of the State.

Illinois specifically provides that the sale of certain game imported from other States shall be lawful at certain seasons, although the same kind of game killed within the State can not be sold at any time. Missouri, New Mexico, and Pennsylvania restrict prohibitions against sale of game to that taken within the State. Nebraska permits the storage but not the sale of imported game during the close season in the State for similar game. In a few instances prohibitions against the sale of certain game are so general as to afford protection over a considerable area. Thus ruffed grouse can not be sold in New Brunswick, Ontario, Manitoba, Maine, New Hampshire, Massachusetts, Connecticut, Michigan, or Minnesota. Antelope can not now be shipped from any State, although they may still be killed in Colorado, Idaho, Nebraska, Oregon, Washington, and Wyoming. Practically every State in which prairie chickens occur has now prohibited their sale or export. Hence the exposure for sale of these birds in any State where they do not occur, as in any city east of Indianapolis, is strong indication of violation of law.

The following table is intended to show two very distinct things: (1) The species which each State and Province prohibits from sale at all seasons. (2) The extension of time beyond the limits of the regular open season allowed dealers in some States, to enable them to dispose of game on hand which can be lawfully sold within the State. The two lists have little in common except that they both come under the head of restrictions on sale of game.

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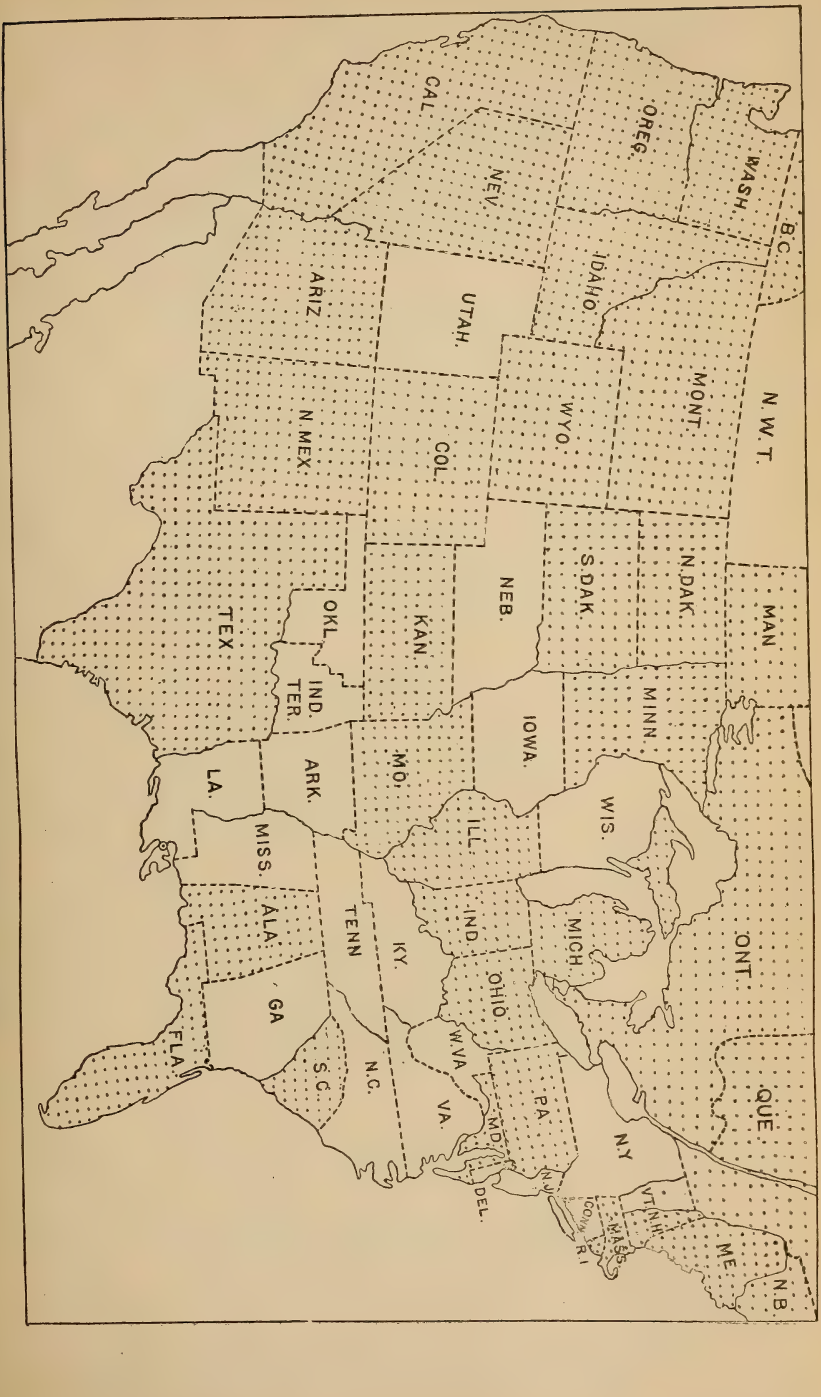
[1] In which the Supreme Court of the United States upheld the constitutionality of the nonexport law of Connecticut.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States (dotted) which prohibit Sale of Certain Game at all Times.

For details, see pages 55–56.

Restrictions on sale of game.

States.	Sale prohibited at all times.	Sale season different from open season.
Alabama	Deer, squirrel, quail, partridge, grouse, pheasant, wild turkey, woodcock, killed or trapped within the State.	
Arizona	Deer, elk, antelope, mountain sheep, mountain goat (or hides of any of said animals), quail, bob-white, partridge, grouse, pheasant, dove, wild turkey, snipe, rail, wild duck, goose, brant.	
California	Deer meat (hides of female deer or those without evidence of sex), quail, partridge, grouse, pheasant, sage hen, ibis, plover.	
Colorado	All game taken in the State	
Delaware	Buying quail, partridge, pheasant, for sale prohibited.	
Florida	Deer, deer hides	
Idaho	Deer, elk, moose, caribou, antelope, mountain sheep, mountain goat (and hides of preceding species), quail, partridge, grouse, prairie chicken, sage hen, pheasant, Mongolian pheasant, duck, goose, swan.	
Illinois	Squirrel (gray, red, fox, black), quail, ruffed grouse (pheasant), pinnated grouse (prairie chicken), wild turkey killed within limits of State, or any deer, pheasant, cacubis, chucker partridge, sand grouse, black India partridge.	Sale seasons for game which may be sold begin 3 days later and end 5 days later than regular close seasons. Imported game in cities, Oct. 1–Feb. 1.
Indiana	Quail	
Iowa		Sale during open season and 5 days thereafter.
Kansas	Quail, partridge, grouse, pinnated grouse (prairie chicken), pheasant, dove (buying also prohibited).	
Maine	Deer, moose, or game birds for shipment beyond limits of State. Ruffed grouse or woodcock for any purpose. (Deer may be sold by local dealers under license.)	
Maryland:		
Anne Arundel	Quail, partridge, pheasant, woodcock	
Baltimore City		Ruffed grouse, sale permitted Oct. 1–Dec. 25.
Frederick	Squirrel, partridge, pheasant, woodcock, taken in county.	
Montgomery	Partridge, pheasant, wild turkey, for export	
Washington	Deer, squirrel, rabbit, partridge, pheasant, wild turkey, taken in county.	
Wicomico	Quail or partridge for export (both counties considered as one territory).	
Worcester		
Massachusetts	Ruffed grouse, woodcock, until 1903	Imported quail, Oct. 1–May 1; imported jack rabbits, white rabbits, grouse, wild pigeons, shorebirds, ducks, at any time.
Michigan	All game protected by State	
Minnesota	Deer, quail, ruffed grouse, pheasant or partridge, sharp-tailed grouse, prairie chicken, aquatic fowl.	
Missouri	Deer, quail, pinnated grouse or prairie chicken, wild turkey, killed in the State (until Mar, 23, 1906).	
Montana	Deer, elk, moose, caribou, antelope, bison, buffalo, mountain sheep, mountain goat, quail, partridge, grouse, prairie chicken, fool hen, sage hen, pheasant, Chinese pheasant, wild duck, goose, brant, swan.	
Nebraska		Sale permitted during open season and 5 days thereafter.
Nevada	All game protected by State	
New Hampshire	Ruffed grouse or partridge, woodcock	
New Jersey		Sale permitted during open season and 30 days thereafter.
New Mexico	Deer, elk, antelope, mountain sheep, ibex, mountain goat, quail, partridge, grouse, prairie chicken, pheasant, wild turkey, killed within the Territory.	
New York		Deer, sale permitted Sept. 1–Nov. 21; quail, grouse, woodcock, sale permitted during open season and thereafter until Jan. 1.[1]

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[1] Possession or sale of deer Nov. 16–20, or quail, grouse, woodcock, Dec. 17-31, presumptive evidence of illegal capture.

Restrictions on sale of game—Continued.

States.	Sale prohibited at all times.	Sale season different from open season.
North Carolina:		
Halifax	Quail or partridge	
Henderson	Wild fowl or game of any kind	
Rowan	Quail or partridge, grouse or pheasant, turkey, dove, woodcock.	
Warren	Quail or partridge	
North Dakota	Deer, ruffed grouse, pinnated grouse, prairie chicken, sharp-tailed grouse, woodcock.	
Ohio	Squirrel, quail, ruffed grouse (pheasant), prairie chicken; Mongolian, English, or ring-necked pheasant; wild turkey, woodcock, killed within the State.	Sale permitted—dove, July 4–Dec. 15; killdeer, plover, snipe, rail, Sept. 1–May 15; coot or mud hen, wild duck, Sept. 1–Apr. 15.
Oregon		Quail, grouse, ring-neck pheasant—sale permitted only during last 15 days of open season.
Pennsylvania	Deer, elk, quail, partridge, grouse, pheasant, wild turkey, woodcock, taken in the State.	
Rhode Island	Pheasant (not ruffed grouse) until 1905	
South Carolina	Quail or partridge taken in the State before 1905	
South Dakota	Deer, elk, buffalo, mountain sheep	
Texas	Deer, antelope, quail (partridge), grouse, prairie chicken (pinnated grouse), Mongolian or English pheasant, turkey, plover, snipe, jacksnipe, killed within the State (except in county in which killed).	
Virginia:		
Greenesville	Quail or partridge taken in county	
Page		
Sussex		
Washington	Elk, moose, caribou, killed within the State; deer, antelope, mountain sheep, mountain goat (or hides of deer, elk, moose, or caribou), quail, partridge, grouse, prairie chicken, sage hen, ptarmigan, pheasant.	
Wisconsin		Deer, sale permitted only Nov. 16–Dec. 6; plover, snipe, duck, Sept. 1–Dec. 1.
Wyoming	Purchase of hides or horns of deer, elk, moose, antelope, mountain sheep, mountain goat, prohibited.	
British Columbia	Elk; female and young of deer, moose, mountain sheep; grouse (except blue grouse), English partridge, pheasant, quail.	Sale: from Sept. 1, male deer; from Oct. 1, male moose, caribou, mountain sheep, mountain goat; in all cases to end of open season and 5 days later.
Manitoba	Deer, elk, moose, caribou, antelope (except heads and hides), quail, grouse, pheasant, partridge, prairie chicken, plover, snipe, sandpiper, woodcock.	
New Brunswick	Partridge[1] until Sept. 15, 1903	Goose and brant, sale in open season and thereafter to Mar. 1.
Northwest Territories	Mountain sheep, mountain goat Prairie chicken, unless captured by owner	
Newfoundland		Ptarmigan, sale permitted during open season and 10 days thereafter.
Ontario	Quail, partridge, woodcock, snipe, until 1905	Sale permitted during open season and not to exceed 20 days thereafter.[2] Licensed cold-storage men may sell during close season.
Quebec	Birch or swamp partridge, until 1903	Sale permitted during open season and 15 days thereafter.

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[1] Sale, in Northumberland County only, permitted at any time of partridge killed in open season.

[2] Close seasons depend on regulations of board of game commissioners.

SHIPMENT OF GAME.

Shipment is one of the most important subjects of game legislation. It controls the trade in game, and on this account deserves careful consideration. Some of the leading topics under this head are 'Marking packages,' 'Shipping within the State,' 'Export from the State,' and 'Transportation of game for propagation,' each of which is taken up in detail below.

MARKING PACKAGES.

Section 4 of the Lacey Act requires that every package containing game animals or birds when shipped by interstate commerce must be clearly marked so as to show the name and address of the shipper and the nature of the contents. The laws of Colorado, Connecticut, Michigan, Nebraska, Oregon, Wisconsin, New Brunswick, and Ontario likewise require packages of fish or game to bear a mark indicating the contents. Such general statements as 'game' or 'birds' are not sufficient to show the nature of the contents, and the marks should indicate not only the *kind* of game, but also, if possible, the *amount* in the package. Some of the shipping tags distributed by commission merchants are printed so that a list of the game and a space for the shipper's name appear on the back of the tag, and in some cases the address is replaced by a number, which is registered on the books of the consignee. When such a tag is tacked to the package the information regarding the shipper's address and the contents of the package is concealed while in transit, but is readily accessible to the consignee by removal of the tag and examination of the reverse side. These tags are in common use in the commission business, and are perfectly legitimate when used for the shipment of fruit and vegetables; but the shipping of game is different, and the shipper who uses such tags should be careful to write his name and address and a statement of the contents on the package or on the face of the tag to avoid the danger of becoming liable to the penalty provided for evasion of the Federal law.

Some of the State laws are very explicit on the subject of marking. Nebraska requires that all packages shall be labeled with the address of the consignor and the amount of each kind of game contained in the package, and provides a fine of $10 to $50 for omission of such marks. Michigan requires that all packages of game shall be plainly marked on the outside with the names of the consignor and consignee, the initial point of billing and destination, and an itemized statement of the quantity of game contained therein. Ontario exacts that all bags, boxes, and parcels, besides bearing a description of the contents and the name and address of the owner, must be so made as to *show the contents.* Several of the States require big game and game birds carried home by sportsmen to be marked with the owner's name, shipped as baggage, and transported open to view. It is a common practice to forward game by express under a false or misleading name, with the hope of avoiding suspicion; but in Nebraska and Wisconsin a false statement as to contents is punishable by a fine of $25 to $100 and in Oregon by a fine of $100 to $500 or imprisonment one to four months, or by both fine and imprisonment.

Railroad and express companies should call the attention of their agents to these provisions and insist that all packages be properly marked before shipment. In Nebraska common carriers are prohibited, under a penalty of $25 to $100, from receiving consignments of game not properly labeled. In Texas they may examine suspected packages, and in Arkansas they may cause them to be opened when necessary and may even refuse packages supposed to contain fish or game for export. In Wisconsin packages of fish or game not properly marked may be seized and sold by game wardens.

Various devices have been resorted to in evading nonexport laws. Game has been shipped in trunks, in butter kegs, or in boxes marked 'dressed poultry,' 'butter,' or 'household goods,' and in packages bearing cipher addresses or numbers or ingeniously concealed statements of contents. All such devices are clearly illegal, and when exposed through inspection by game wardens or deputy marshals render the shipper liable to the loss of his game, beside additional heavy penalties for evasion of the shipping laws.

SHIPMENT WITHIN THE STATE.

In the shipment of game a distinction is made between shipping within the State and exporting from the State. The majority of the States which prohibit export place no restriction on shipment within the State, but in the others various limitations exist. Delaware, Minnesota, Missouri, Texas, Kansas, and Nevada prohibit shipment of all or certain kinds of game within the State. Fourteen other States and one Province of Canada permit such shipment, but guard against abuses by numerous requirements. In eight of these—Maine, New Hampshire, Connecticut, New York, Wisconsin, Iowa, Wyoming, and New Brunswick—shipment is allowed under hunters' licenses, usually on condition that the game be tagged, carried openly, and accompanied by the owner, though sometimes special exceptions are made to this rule. Thus, Maine forbids the transportation of moose, deer, and game birds from place to place unless accompanied by the owner, but provides for their shipment under tags sold by the commission of inland fisheries and game. The remaining seven States permit any person to ship game, but impose many restrictions with regard to such matters as marking packages, shipping open to view, etc. In States like Maryland, Virginia, North Carolina, and Tennessee, which have special county legislation, laws concerning shipment of game usually relate to export from counties, though the last two prohibit export of quail from the State by general law. In like manner Delaware, Florida, and New York prohibit the shipment of certain game from the counties where killed; but these are exceptional, all other States treating the State as a unit. New Hampshire prohibits all shipment within the State of moose, caribou, and elk, but permits the shipment of deer under certain conditions when accompanied by the owner.[1] Vermont prohibits the general transportation of deer, but allows the owner to carry one deer with him, open to view and tagged. New York, while prohibiting general transportation of deer or venison from or through any county, allows one carcass to be shipped when accompanied by the owner, but does not permit more than two deer to be transported by the same person in one season. Woodcock, grouse, and quail likewise can not be transported in the State or brought into the State from a point 25 miles from the State line unless accompanied by the owner, and the latter is not permitted to transport more than 12 each of grouse or woodcock at one time, or 36 of each in one season.[2] Connecticut likewise prohibits transportation of quail, woodcock, and ruffed grouse in the State, except when accompanied by the actual owner, and limits the number of ruffed grouse which may be carried in any one year to 36. Iowa permits a person to ship to anyone within the State not more than 1 dozen game birds in one day during the open season, providing the shipper first makes affidavit that the birds have not been unlawfully killed or bought and are not being shipped for sale or profit, and furnishes a copy of the affidavit to accompany the shipment for the security of the carrier. The transportation for sale of quail in South Carolina and deer and upland game birds in Florida and North Dakota are also prohibited. In Florida transportation of game is further limited to the carrying by hunting parties of their own game to their homes in the State. New Brunswick forbids the transportation of moose, caribou, or deer, alive or dead, or the hides or any portion of these animals, unless tagged, and accompanied by the owner. An exception is made, however, in the case of scientific specimens and breeding stock, which may be transported under special permit of the surveyor-general. Nevada includes *transporting* among the prohibitions concerning all big game except male deer and antelope. Nebraska and Wisconsin prohibit the transportation of all game protected by the State; Texas, all domestic game; Wyoming, big game only; Kansas and Iowa, game birds only; Connecticut, upland game birds only; Missouri, upland game birds and deer; Vermont and Michigan, deer alone; Delaware, rabbits, quail, woodcock, and snipe, and Minnesota, all protected birds except woodcock and upland plover.

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[1] An exception is made in favor of the Blue Mountain Association, which is permitted to ship game from its own preserve without restriction.

[2] Export of game from the State is prohibited.

EXPORT FROM THE STATE.

Since the constitutionality of the Connecticut statute prohibiting export of certain game was established by the Supreme Court in 1896,[1] nonexport laws have been generally adopted, and at the present time nearly every State prohibits the export of certain kinds of game. (See Pl. VIII.) Kentucky, Louisiana, and Mississippi seem to have no such laws; Virginia also has no general State law, but several of the counties prohibit shipment.

In Maine, New Hampshire, Vermont, Indiana, Illinois, Wisconsin, Iowa, Nebraska, South Dakota, Wyoming, Colorado, Newfoundland, and possibly a few other States, sportsmen are allowed to carry a limited amount of game out of the State under special restrictions. In a few States exceptions to the laws prohibiting export are also made in the case of birds and animals intended for propagation. (See pp. 65–67.)

Deer can not be lawfully exported from Alabama, Florida, any of the States or Territories west of the Mississippi (except Montana, Kansas, Iowa, and Louisiana), or any of the States north of the Ohio and Potomac rivers (except Illinois, Ohio, Delaware, New Jersey, Connecticut, Rhode Island, and Massachusetts). In Montana they can not be sold; in Delaware they do not occur, and in Illinois, Iowa, New Jersey, Connecticut, Massachusetts, and Rhode Island they are protected at all seasons indefinitely or for a term of years. The shipment of deer hides is prohibited by special provisions in the laws of California, Florida, Nevada, New Mexico, Oregon, and Wyoming; Washington and British Columbia prohibit killing deer for hides, and Ontario, British Columbia, New Brunswick, and Newfoundland allow shipment of green hides only under license. The shipping of other big game is so generally prohibited that, although antelope and elk may still be killed in half a dozen western States, they can not be exported. Consequently the sale of either antelope or elk in any market east of the Mississippi River is evidence of violation of law, at least on the part of the shipper.

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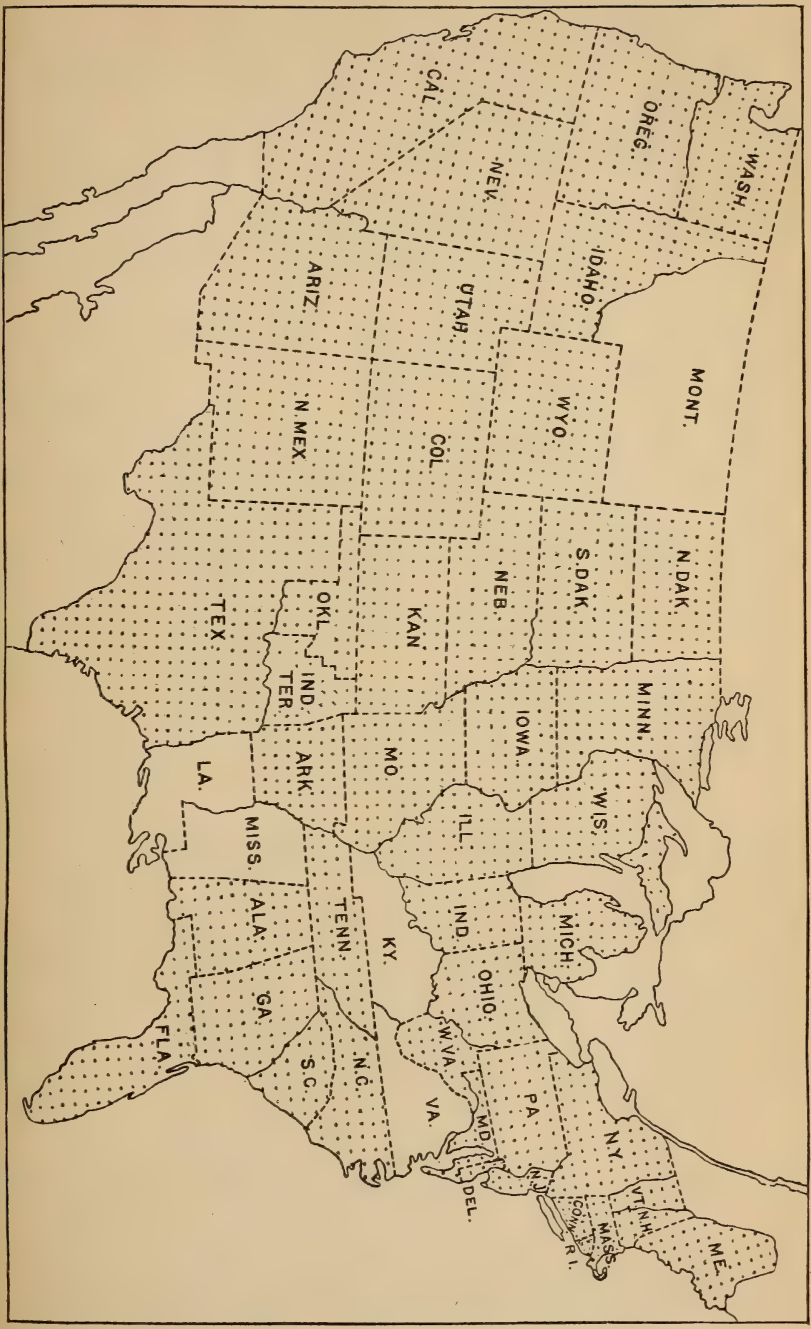
[1] Geer *v.* Connecticut, 161 U. S. 519.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STATES (DOTTED) WHICH PROHIBIT EXPORT OF GAME.

For details, see pages 60–65.

Among game birds the most general prohibition is that against the export of quail, which is now in force in every State and Territory with six exceptions. Among the excepted States are Montana, North Dakota, and Wyoming, in which quail are scarce, and in Montana the sale and in North Dakota the killing of these birds are at present unlawful. Nearly every State in which prairie chickens occur now has a non-export law. The effect of this law, combined with the sale restrictions, as already stated, is to make the sale of prairie chickens illegal outside of their normal range.

Special attention is called to the following table, which contains a list of the game prohibited from export by each State:

Export of game prohibited by State laws.[1]

States.	Kinds of game—Penalties.
Alabama, 1899	Deer, squirrel, quail, partridge, grouse, prairie chicken, pheasant, English, Mongolian, or Chinese pheasant, wild turkey, woodcock—penalty, $50-$100.
Arizona, 1901	Deer, elk, antelope, mountain sheep, mountain goat, quail, bobwhite, grouse, pheasant, wild turkey, dove, snipe, rail, wild duck, goose, brant—penalty, $100 or less, or imprisonment 1 day for each dollar of fine and costs unpaid.
Arkansas	Deer, quail, Virginia partridge, pinnated grouse or prairie chicken, wild turkey—penalty, $10-$20 for each deer, $25-$50 for each pinnated grouse, and $3-$10 for every other bird.
California, 1901	Deer, deer skins, quail, partridge, grouse, prairie chicken, pheasant, dove, wild pigeon, plover, snipe, rail, curlew, ibis, wild duck (except for propagation under permit from fish commission)—penalty, $25-$500, or imprisonment 25-150 days.
Colorado, 1899	Deer, elk, antelope, bison, buffalo, mountain sheep, quail, partridge, grouse, ptarmigan, prairie chicken, sage chicken, pheasant, wild turkey, dove, pigeon, snipe, curlew, crane, duck, goose, brant, swan, waterfowl (game may be exported only under permit from game commissioner)—penalty, $10-$500, or imprisonment 10-180 days, or both fine and imprisonment.
Connecticut, 1901	Quail, ruffed grouse, woodcock—penalty, $10-$100 and $10 additional for each bird.
Delaware, 1893	Rabbit, quail, partridge, woodcock, robin (nonresidents also prohibited from shipping Wilson or English snipe)—penalty, $5 for each rabbit or bird and costs of prosecution.
Florida, 1899	Deer, deer hides, quail or partridge, wild turkey—penalty, $25-$100 or 3-6 months' imprisonment at hard labor.
Georgia, 1899	Quail or partridge—penalty, fine not exceeding $1,000, imprisonment not exceeding 6 months, or hard labor not exceeding 12 months.
Idaho, 1899	Deer, elk, moose, caribou, antelope, mountain sheep, mountain goat, quail, partridge, grouse, prairie chicken, sage hen or fool hen, pheasant, Mongolian pheasant, wild duck, goose, swan (law does not apply to mounted heads or stuffed specimens)—penalty, $25-$75 with costs.
Illinois, 1899	Squirrel, quail, ruffed grouse, pinnated grouse, prairie chicken, pheasant, wild turkey taken within the State (game may be exported only under license from the State)—penalty, $25-$100.
Indiana, 1901	Deer, quail, grouse, prairie chicken, pheasant, wild turkey, woodcock[2]—penalty, $10-$100.
Indian Territory,[3] 1896.	Deer, antelope, quail, prairie chicken, wild turkey, or other game from the Chickasaw Nation—penalty, $25-$100 and imprisonment.

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[1] Prohibitions against transporting game within the State or from one county to another are not included.

[2] A limited number of birds may be exported under a nonresident license.

[3] This is a tribal law of the Chickasaw Nation. The Federal law, which applies to the whole Territory, provides: "Every person other than an Indian who hunts, traps, takes, or destroys any game, *except for subsistence in the Indian country*, shall forfeit all traps, guns, and ammunition in his possession, and shall be liable in addition to a penalty of $500." (Rev. Stat. U. S., 1878, sec. 2137.)

Export of game prohibited by State laws—Continued.

States.	Kinds of game—Penalties.
Iowa	Squirrel, quail, ruffed grouse, pinnated grouse, prairie chicken, pheasant, wild turkey, woodcock, wild duck, goose, brant (nonresident may take from State not more than 25 game birds or animals killed by himself when carried openly for inspection)—penalty, $10 for each bird and costs of prosecution.
Kansas, 1899	Quail, partridge, grouse, pinnated grouse, prairie chicken, pheasant, dove—penalty, $5–$100, costs, and attorney's fee of $10.
Maine, 1899	Deer, moose, and game birds (quail, ruffed grouse, pheasant, capercailzie or cock of the woods, black game, plover, woodcock, snipe, sandpiper, wood duck, dusky or black duck, teal, gray duck)—penalty, $40 and costs for each deer or moose, $5 for each bird.
Maryland, 1898–1900:	
Anne Arundel	Quail, partridge, pheasant, woodcock—penalty, $5 for each bird.
Caroline	Rabbit, quail, partridge, woodcock—penalty, $5 for each rabbit or bird.
Frederick	Squirrel, partridge, pheasant, woodcock, taken in county—penalty, $50.
Kent	Squirrel, rabbit, or any bird taken in county for sale—penalty, $30.
Montgomery	Partridge, pheasant, wild turkey, for sale—penalty, $10.
Queen Anne	Rabbit, partridge, woodcock, taken in county for sale—penalty, $5 for each bird.
Somerset	Squirrel, rabbit, partridge, pheasant, dove, woodcock, duck, goose—penalty, $5–$25 for each animal or bird.
Washington	Deer, squirrel, rabbit, partridge, pheasant, wild turkey, taken in county for sale—penalty, $10–$20.
Wicomico and Worcester.	Quail or partridge (both counties considered as one territory)—penalty, $5–$25.
Massachusetts, 1890	Quail, ruffed grouse, woodcock—penalty, $20.
Michigan, 1893	Deer, elk, moose, caribou, squirrel, quail, partridge, prairie chicken, ruffed grouse, spruce hen, Mongolian or English pheasant, wild turkey, dove, pigeon, plover, snipe, woodcock, duck, goose, brant, or other wild waterfowl—penalty, $10–$50.
Minnesota, 1897–1901.	Deer, elk, moose, caribou, quail, partridge, ruffed grouse, pheasant, prairie chicken, pinnated grouse, sharp-tailed or white-breasted grouse, Mongolian, English, or Chinese pheasant, dove, upland plover, snipe, woodcock, wild duck, goose, brant—penalty, $50–$100 and costs, or imprisonment 60–90 days for each deer, elk, moose, or caribou; $10–$25 and costs, or imprisonment 10–30 days for each bird.
Missouri, 1901	Deer, quail, pinnated grouse, prairie chicken, wild turkey, can not be shipped out of county in which killed—penalty, $25–$100. (Law not applicable to game imported from other States.)
Nebraska, 1901	Deer, elk, antelope, quail, partridge, pheasant, grouse, ptarmigan, prairie chicken, sage chicken, wild turkey, wild pigeon, dove, plover, snipe, yellow legs, curlew, crane, duck, goose, brant, swan—penalty for common carriers or nonresidents, fine $50–$100, or imprisonment not exceeding 60 days; for residents, fine $5 for each bird, or imprisonment not exceeding 90 days.
Nevada, 1901	Deer, antelope, mountain sheep, or hides or horns of said animals, quail, grouse, sage chicken, prairie chicken, dove, wild duck, goose, or plumage of said birds—penalty, $25–$200, or imprisonment 10–90 days, or both.
New Hampshire, 1901	Deer, moose, caribou (unless open to view, tagged, and accompanied by owner), pheasant, blackgame, sharp-tailed grouse, capercailzie—penalty, $100.[1]
New Jersey, 1901[2]	Hare, rabbit, squirrel, quail or partridge, ruffed grouse or pheasant, pinnated grouse, English pheasant, ring-necked pheasant, woodcock—penalty, $20 for each animal or bird.
New Mexico, 1899	Deer, elk, antelope, mountain sheep, mountain goat (or hides of any of said animals), quail, partridge, grouse, prairie chicken, pheasant, Mongolian or Chinese pheasant, wild turkey—penalty, $25–$100, or imprisonment 30–60 days, or both fine and imprisonment.
New York, 1900–1901.	Game or birds taken in the State, including deer, elk, antelope, moose, caribou, squirrel, hare and rabbit, quail, grouse, Mongolian and English pheasants, plover, Wilson and English snipe, woodcock, curlew, shore birds, rail, mud hen, gallinule, water chicken, duck, goose, brant, or swan—penalty, mammals, $100 for each violation and an additional $100 for each deer, elk, antelope, or caribou, and $250 for each moose; birds, $60 for each violation and an additional $25 for each bird.
North Carolina, 1883–1901.	Quail or partridge—penalty, fine not exceeding $50, or imprisonment not exceeding 30 days. (Wild fowl, Currituck County only, Mar. 31–Nov. 10.)
Cleveland	Partridge for profit from county—penalty, not exceeding $25, or imprisonment 20 days.
Currituck	Wildfowl, April 1 to November 10—penalty, $20–$50, or imprisonment for not exceeding 30 days.

[1] Blue Mountain Forest Association permitted to ship deer, elk, and moose killed in its preserve.

[2] Law not applicable to English or ring-neck pheasants killed on preserves at present established.

Export of game prohibited by State laws—Continued.

States.	Kinds of game—Penalties.
North Carolina, 1883–1901—Continued.	
Henderson	Birds, game, or wildfowl—penalty, $2–$10, or imprisonment 5–10 days.
Lenoir	Quail, partridge for sale from county—penalty, not exceeding $50, or imprisonment for 30 days or more.
Rowan	Quail, partridge, grouse, pheasant, wild turkey, dove, woodcock from county—penalty, not exceeding $100, or imprisonment 60 days, or both.
Yancey	Quail, partridge from county—penalty, fine or imprisonment in discretion of court.
North Dakota	Deer, elk, moose, caribou, antelope, buffalo, mountain sheep, ruffed grouse, prairie chicken, pinnated grouse, sharp-tailed grouse, woodcock, wild duck, wild goose, brant, wild swan—penalty, $100 for each animal, $10 for each bird.
Ohio, 1900	Squirrel, quail, ruffed grouse or pheasant, prairie chicken, Mongolian pheasant, English or ring-necked pheasant, wild turkey, woodcock—penalty, $25–$100.
Oklahoma, 1899	Deer, antelope, quail, grouse, prairie chicken, Mongolian or other pheasant, wild turkey, dove, plover—penalty, for shipper, $25–$100 and costs; for common carrier, $50–$500 and costs.
Oregon, 1901[1]	Deer, antelope, elk, moose, mountain sheep (or hides of said animals) for purposes of sale; quail or bobwhite, English or gray partridge, capercailzie, moor hen, grouse, sage hen, pheasant, Mongolian, silver, golden, copper, green Japanese, and Reeves pheasants, prairie chicken, wild turkey, woodcock, rail, upland plover, wild duck, goose, swan, or other wild fowl (except birds raised in confinement and shipped for breeding purposes)—penalty, for big game, $100–$500 and costs or imprisonment; for birds, $15–$200, or imprisonment 7–100 days, or both fine and imprisonment.
Pennsylvania, 1897	Deer, elk, rabbit, hare, squirrel, quail, partridge, grouse, pheasant, English, Mongolian, or Chinease pheasant, wild turkey, reedbird, plover, woodcock, rail, web-footed wild fowl taken in the State—penalty, $50–$100.
Rhode Island, 1900	Quail, ruffed grouse, woodcock—penalty, $20 for each bird.
South Carolina, 1900	Quail or partridge for sale (until 1905)—penalty, not exceeding $30, or imprisonment not exceeding 30 days.
South Dakota 1899	Deer, elk, antelope, buffalo, mountain sheep, quail, ruffed grouse, prairie chicken, pinnated grouse, sharp-tailed grouse, plover, curlew, woodcock, crane, wild duck, wild goose, brant (except that 3 deer, 1 elk, 1 buffalo, 1 mountain sheep, and not more than 25 birds not intended for commercial purposes, may be shipped in open view during open season and 3 days thereafter, when tagged and accompanied by owner, and, in the case of big game, a certificate—good for 5 days—that such game was lawfully killed must be obtained from a justice of the peace and given to the carrier)—penalty, for big game, $25–$200, or imprisonment 30-180 days, or both fine and imprisonment; for birds, $10–$50.
Tennessee, 1896–1899	Quail, from State prohibited until Mar. 24, 1902—penalty, $5–$10 for each quail.
Anderson, Rutherford, Sumner, Tipton, Wilson.	Quail, partridge, prairie chicken, grouse, pheasant from county.
Benton	Quail, partridge, squirrel from county.
Bledsoe, Campbell, Carter, Claiborne, Clay, Cumberland, Fentress, Johnson, Meigs, Morgan, Pickett, Putnam, Rhea, Scott, Sequatchie, Van Buren, White.	Nonresidents prohibited from killing or carrying away any game.
Bradley, Dyer, Hawkins.	Quail or partridge for profit from county.
Carroll, Crockett, Gibson, Grainger, Hamblen, Henderson, Madison, Obion.	Quail, partridge from county.
Carter, Greene, Hamilton, Hawkins, Henry, Johnson, Marion, Sullivan, Unicoi, Washington.	Quail, partridge, woodcock, pheasant, wild turkey from State

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[1] Any citizen of Washington permitted to take one day's bag with him out of the State.

Export of game prohibited by State laws—Continued.

States.	Kinds of game—Penalties.
Tennessee, 1896-1899—Continued.	
Grundy, Van Buren.	Deer, quail, partridge, wild turkey from county.
Haywood	Quail, partridge, woodcock, pheasant, wild turkey from county.
Lauderdale	Deer, quail, wild turkey, duck from county.
Robertson, Sumner, Trousdale.	Quail, partridge, grouse, pheasant from county.
Warren	Wild turkey from county.
Weakley	Quail, partridge, pheasant, wild turkey, duck from county.
Texas, 1897	Deer, antelope, quail or partridge, grouse, pinnated grouse or prairie chicken, Mongolian or English pheasant, wild turkey, plover, snipe, jacksnipe (does not apply to Mongolian or English pheasants shipped for breeding purposes)—penalty, $25–$200 for each shipment.
Utah, 1899	Deer, elk, antelope, buffalo or bison, mountain sheep, partridge, prairie chicken, sage hen or grouse, pinnated grouse, pheasant, Mongolian, Chinese, or English pheasant, dove, snipe, duck, goose, brant, swan, or any introduced game animal or bird—penalty not less than $10.
Vermont, 1896	Deer, quail, ruffed grouse or partridge, pheasant, English partridge, plover, English snipe, woodcock, wild duck, wild goose (except that game birds may be shipped by nonresidents during open season and 3 days thereafter, and 1 deer during open season and 10 days thereafter, if shipped in open view, properly tagged, and accompanied by owner)—penalty for deer, $100; for birds, $50.
Virginia, 1889-1900:	
Augusta	Deer, quail, ruffed grouse, wild turkey from State—penalty, $5–$20.
Floyd	Quail, ruffed grouse, wild turkey from county—penalty, $20–$100, or imprisonment until fine and costs paid.
Frederick	Deer, quail, ruffed grouse, wild turkey, woodcock, willet, marsh hen, water fowl (except summer duck and sora) from county—penalty, $10 first offense, $20 thereafter.
Henry	Quail from county—penalty, $10 or 30 days.
Lee	Quail from county by nonresident (except when killed by himself and under license)—penalty, $10.
Page	Quail from county—penalty, $5–$20.
Pittsylvania	Quail from State (except by nonresident sportsmen who do not shoot for market and who accompany shipment)—penalty not less than $50 for first offense, $100 thereafter.
Rockingham	Deer, quail, ruffed grouse, wild turkey from State—penalty, $5–$20.
Shenandoah	Deer, quail, ruffed grouse, Japanese, Mongolian and ring-neck pheasants, wild turkey, woodcock, or any other game from county—penalty, $10 for first offense, $20 each subsequent offense.
Washington, 1897[1]	Deer, elk, moose, caribou, antelope, mountain sheep or goat, partridge, grouse, prairie chicken, sage hen, pheasant, ptarmigan, plover, rail, sand-hill crane, mallard duck, widgeon, teal, wood duck, spoonbill, gray or black duck, sprigtail, canvasback duck (or other game duck), swan, or other game waterfowl, or any other game animal or bird of the State, including introduced bobwhite, California valley quail, mountain quail, and Old World pheasants—penalty, $10–$100 and costs.
West Virginia, 1899	Deer, quail, pheasant, ruffed grouse, wild turkey—penalty, $20–$50 and imprisonment, at discretion of court, not exceeding 10 days.
Wisconsin, 1899-1901	Deer (except 2 under nonresident license Nov. 16–Dec. 6), squirrel, rabbit, quail, partridge, grouse, prairie chicken or prairie hen, pheasant, Mongolian, Chinese, or English pheasant, dove, plover, snipe, woodcock, wild duck, goose, brant, or other aquatic fowl, except 50 in a year under nonresident license (does not apply to shipment of live birds; in the case of duck, snipe, and plover, shipment only from Sept. 1–Dec. 1)—penalty (maximum), $50–$200, or imprisonment 60 days–6 months, or both fine and imprisonment.
Wyoming, 1899	Deer, elk, moose, antelope, mountain sheep, mountain goat, or horns or hides of any of said animals (does not apply to mounted heads or stuffed specimens)—penalty, $100–$500 for each consignment.
British Columbia, 1898.	Deer, elk, moose, caribou, mountain sheep, mountain goat, quail, partridge (English), pheasant, grouse, prairie chicken, plover, duck (but heads, horns, and skins, and big game may be shipped under license)—penalty, $100 or less, or 30 days or less, or both.
Manitoba	Deer, elk, moose, caribou, antelope, quail, grouse, partridge, prairie chicken, pheasant, plover, snipe, sandpiper, woodcock, duck—penalty, $10–$100 and costs.
New Brunswick, 1899-1900.[2]	Deer, moose, caribou, partridge, woodcock, snipe, wood duck, dusky (black) duck, teal, goose, brant, or any portion thereof—penalty, $50–$100. Partridge—penalty, $25.

[1] Any citizen of Oregon permitted to take one day's bag with him out of State.

[2] Surveyor-general may issue special license to export game alive or dead.

Export of game prohibited by State laws—Continued.

States.	Kinds of game—Penalties.
Newfoundland, 1899[1]	Caribou (carcass or skin—except under license), willow or other grouse for sale—penalty, $500 for caribou, $5 per bird for grouse. (Vessel receiving caribou for transportation may be seized and sold to satisfy fine.)
Northwest Territories, 1899.	Elk, moose, caribou, antelope (or the young of any of these animals), grouse, partridge, prairie chicken, pheasant—penalty, not exceeding $50 and costs, or imprisonment not exceeding 2 months.
Ontario, 1900	Deer, elk, moose, caribou, or head, skin, or other part thereof—penalty, $20-$50.

[1] Minister of Marine and Fisheries may authorize export for breeding and other purposes.

Besides the various Canadian nonexport laws included in the above table Canada has a general law prohibiting export of deer, wild turkeys, quail, partridge, prairie fowl and woodcock, but making exception in the case of deer raised on private preserves and permitting nonresident sportsmen to export two deer each in a calendar year at certain ports within fifteen days after the close of the open season. The ports of export are Halifax and Yarmouth, Nova Scotia; Macadam Junction, New Brunswick; Quebec, Montreal, and Ottawa, Quebec; Kingston, Niagara Falls, Fort Erie, Windsor, Sault Ste. Marie, and Port Arthur, Ontario; and such others as the Minister of Customs may from time to time designate. (See pp. 137-138.)

GAME FOR PROPAGATION.

The subject of transportation of game for breeding purposes is one that has received too little attention at the hands of lawmakers. In some States the prohibition against export is so broad as to include not only dead game, but also live animals and birds intended for propagation. Legislation aimed directly at the sale of live game for such purposes is found in at least one State, Montana, which declares that any person who shall willfully catch, trap, or otherwise restrain for the purpose of sale, or domestication, or any other purpose, any buffalo, elk, moose, or mountain sheep shall be guilty of a misdemeanor. Maine has recently inaugurated a departure in requiring every person who imports any game to first secure a permit from the commission of inland fisheries and game, under penalty of a fine of $50 to $500. Delaware, Nevada, North Carolina, and Tennessee have stringent laws prohibiting the export of quail, dead or alive, out of the State.

One of the objects of the Lacey Act is "to aid in the restoration of such [game] birds in those parts of the United States adapted thereto where the same have become scarce or extinct," and to that end the Secretary of Agriculture is authorized "to purchase such game birds and other wild birds as may be required therefor, subject, however, to the laws of the various States and Territories." Laws prohibiting the export of live birds from the State tend to interfere seriously with the accomplishment of this purpose. It would seem that a free interchange of game birds for restocking depleted covers should be a matter of mutual interest to all States that desire to restore the former abundance of game.

Canadian laws are less restrictive. The Dominion places no restriction on the exportation of live game, and several of the Provinces authorize the proper authorities to issue licenses for shipment of game intended for breeding purposes. A few States have adopted this principle, and some others make exceptions in nonexport laws, or permit the possession at any time of game intended for propagation. These exceptions are shown in the following list:

EXCEPTIONS TO NONEXPORT AND OTHER LAWS IN FAVOR OF GAME FOR PROPAGATION.

Arizona.—Possession of game birds for propagation permitted during close season. Fish and game commissioners authorized to take eggs of game birds for hatching. (Acts of 1901, No. 57, secs. 2, 18.)

California.—Exception in case of deer and game birds for propagation, provided that a permit in writing be obtained beforehand from the State board of fish commissioners. (Penal Code, as amended 1901, secs. 626l, 627a, p. 821.)

Colorado.—Game commissioner may grant permits to proprietors of parks for exchange of game with other persons within or without the State.

Game for propagation may be imported from any other State or Territory, and the commissioner shall issue certificate therefor without charge.

The commissioner may, upon being satisfied that the possession or transportation of game is not in violation of the spirit of the law, grant a permit therefor. (Laws of 1899, ch. 98, pp. 196, 204, 207.)

Illinois.—Lawful to export any squirrels or game birds captured within the State, under a license from the State of Illinois. (Laws of 1899, p. 224, sec. 2.)

Indiana.—Exception in case of deer, wild turkeys, or imported pheasants in possession for breeding purposes. (Laws of 1901, p. 444, sec. 7.)

Maryland.—Exceptions in the local laws of Cecil and Harford counties in case of game for propagation. (Acts of 1896, ch. 237; acts of 1894, ch. 139.)

Michigan.—State game and fish warden authorized to issue permits to capture any game animals or birds for propagation if not for sale; also to issue permits to trustees or custodians of public parks to export animals intended for free exhibition or for exchange with other public parks. (Pub. Acts of 1901, H. B. No. 104, secs. 21–22.)

Nevada.—Exception in case of residents taking big game and game birds for propagation or domestication under written permit from governor. (Stats. of 1901, Ch. CX, sec. 15.)

New Jersey.—Exception in case of bringing into the State any animals or birds for propagation or keeping the same until a seasonable time for their release. (Laws of 1901, ch. 120, sec. 15.)

New York.—Elk, moose, caribou, and antelope may be brought into the State and kept in possession for breeding purposes. (Laws of 1901, ch. 147.)

Oklahoma.—Exception in case of fine birds or animals captured for domestic or scientific purposes, provided that not more than one pair of such birds or animals may be shipped at one time. (Laws of 1899, p. 167, sec. 11.)

Oregon.—Exception in case of game for propagation, provided written permit first be obtained from State game and forestry warden. (Gen. Laws of 1901, p. 226, sec. 23; p. 233, sec. 42.)

Texas.—Exception in case of live Mongolian or English pheasants shipped for scientific or breeding purposes. (Gen. Laws of 1897, ch. 149, sec. 7.)

Utah.—Exception in case of quail taken for propagation, in Kane and Washington counties. (Laws of 1899, ch. 26, sec. 26.)

Wisconsin.—Exception in case of live birds. (Wis. Stat., 1898, Vol. I, sec. 1498m.)

Wyoming.—Lawful to sell any colin or quail for the purpose of breeding, or for any person to take alive on his own premises at any time any big game for domestication or for scientific or breeding purposes. (Rev. Stats., 1899, sec. 2117.)

Manitoba.—Exception in case of big game, grouse, prairie chickens, and pheasants, provided special permit be obtained from the minister of agriculture and immigration, and not more than two animals or birds be shipped at one time. (Stats. of 1900, ch. 14, sec. 17.)

New Brunswick.—Lawful to export live game under license from surveyor-general.

Newfoundland.—Exception in case of caribou, willow or other grouse, and partridge under authorization by minister of marine and fisheries, for sale to or exchange with game societies or institutions in other countries. (Acts of 1899, cap. 18, sec. 21; cap. 27, sec. 4.)

Northwest Territories.—Young deer, elk, moose, caribou, antelope, sheep, and goats may be taken alive and domesticated, but only deer, sheep, and goats can be lawfully exported from the Territory. (Con. Ordinances, 1898, ch. 85, secs. 2, 13.)

II. ABSTRACTS OF LAWS WITH SPECIAL REFERENCE TO SHIPMENT AND SALE.

FEDERAL LAWS.

Federal game laws consist of statutes regulating interstate commerce in game, the importation of game from foreign countries, and provisions for the protection of game on territory under the jurisdiction of the United States. They comprise (1) the Lacey Act, regulating the importation of game and its shipment from one State to another; (2) tariff regulations governing animals and birds imported from abroad; (3) game laws of the District of Columbia, Alaska, and the Indian Territory; (4) provisions for protecting game in the national parks,[1] forest reserves, and other Government reservations. These acts of Congress are supplemented by regulations issued by the Secretaries of the Treasury, War, Interior, and Agriculture, relating chiefly to the protection of Government reservations and the details of importing foreign animals and birds.[2]

The territory protected by Federal statutes comprises more than 20 percent of the total area of the United States, and, besides the District of Columbia, the Indian Territory, and Alaska, is made up of reservations and parks ranging in size from a few acres to the great areas covered by the Indian reservations in Montana and South Dakota, which occupy a large part of those States. This vast domain is very unevenly protected. The District of Columbia, with an area of about 70 square miles, has a fairly complete and satisfactory game law, and, with the exception of Alexandria County, Va., is the smallest area in the United States protected by a special game statute. The Yellowstone National Park, with an area of 3,578 square miles, has also a comprehensive law, passed in 1894; and, like the Sequoia, Yosemite, and General Grant parks, in California, is guarded by United States troops. The Indian Territory, 31,400 square miles in extent, almost as large as the State of Maine, and one of the best regions in the Southwest for small game, is protected only by a provision prohibiting persons other than Indians from destroying game, except for food, in the Indian country.[1] The forest reserves, aggregating 46,766,529 acres, or about 73,000 square miles, an area nearly equal to that of New England and New York combined, are subject to regulations of the Secretary of the Interior, who is authorized by Congress to "make provisions for protection against destruction by fire and depredations upon public forests and forest reservations." There is further protection, however, in the provision of Congress that offenses concerning which the Federal laws are silent, when committed on Government reservations, shall receive the same punishment as that prescribed for like offenses by the laws of the State in which such reservations are situated. The great Territory of Alaska, embracing 570,000 square miles (more than twice the total area of Texas) is at present practically without protection, having but the nucleus of a game law in a provision prohibiting the export of eggs of cranes, ducks, and geese.

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[1] The national parks, now 12 in number, have all been established during the last thirty years. They may be grouped as follows: Five parks proper—Yellowstone, Wyo., 1872, 2,142,720 acres; Yosemite, Cal., 1890, 967,680 acres; Sequoia, Cal., 1890, 160,000 acres; General Grant, Cal., 1890, 2,560 acres; Mount Rainier, Wash., 1899, 207,360 acres: five military parks—Chickamauga, Ga., 1890, 6,195 acres; Shiloh, Tenn., 1894, 3,000 acres; Vicksburg, Miss., 1899, 1,233 acres; Gettysburg, Pa., 1895, 877 acres; Antietam, Md., 1890, 43 acres: the Hot Springs Reserve, Ark., 1880, 912 acres, and the Casa Grande Ruins, Ariz., 1892, part of 480 acres. The first five only are of special interest from the standpoint of game protection.

[2] The regulations of the Department of Agriculture may be found in Circular 29 of the Biological Survey, entitled 'Protection and importation of birds under act of Congress approved May 25, 1900,' and Circular 30, entitled 'Wild animals and birds which may be imported without permits.'

As a rule Federal laws are less subject to change than State laws. The game law of the District of Columbia passed in 1878, remained in force for twenty-one years; that of the Indian Territory enacted nearly seventy years ago (in 1832) is still on the statute books, and is now the oldest game law in force in the United States. These laws are scattered through the Revised Statutes and the Statutes at Large, often in very obscure places, and are easily overlooked. For example, the prohibition against importing eggs of game birds is contained in the free list of the tariff act of 1897; that conferring authority on the Secretary of the Interior to make regulations for the forest reserves, in the sundry civil bill for 1897, and that providing for the enforcement of State laws by Federal authority on Government reservations, in an act to protect harbor defenses, passed in 1898. In the absence of any complete compilation of the Federal provisions concerning game, it has been deemed advisable to bring them together in the present publication for greater convenience of reference.

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[1] Such tribal laws as exist are not enforced by the United States courts.

THE LACEY ACT.

31 Statutes at Large, pp. 187–189.

CHAP. 553. An Act to enlarge the powers of the Department of Agriculture, prohibit the transportation by interstate commerce of game killed in violation of local laws, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the duties and powers of the Department of Agriculture are hereby enlarged so as to include the preservation, distribution, introduction, and restoration of game birds and other wild birds. The Secretary of Agriculture is hereby authorized to adopt such measures as may be necessary to carry out the purposes of this Act and to purchase such game birds and other wild birds as may be required therefor, subject, however, to the laws of the various States and Territories. The object and purpose of this Act is to aid in the restoration of such birds in those parts of the United States adapted thereto where the same have become scarce or extinct, and also to regulate the introduction of American or foreign birds or animals in localities where they have not heretofore existed.

The Secretary of Agriculture shall from time to time collect and publish useful information as to the propagation, uses, and preservation of such birds.

And the Secretary of Agriculture shall make and publish all needful rules and regulations for carrying out the purposes of this Act, and shall expend for said purposes such sums as Congress may appropriate therefor.

SEC. 2. That it shall be unlawful for any person or persons to import into the United States any foreign wild animal or bird except under special permit from the United States Department of Agriculture: *Provided,* That nothing in this section shall restrict the importation of natural history specimens for museums or scientific collections, or the importation of certain cage birds, such as domesticated canaries, parrots, or such other species as the Secretary of Agriculture may designate.[1]

The importation of the mongoose, the so-called ''flying foxes'' or fruit bats, the English sparrow, the starling, or such other birds or animals as the Secretary of Agriculture may from time to time declare injurious to the interest of agriculture or horticulture is hereby prohibited, and such species upon arrival at any of the ports of the United States shall be destroyed or returned at the expense of the owner. The Secretary of the Treasury is hereby authorized to make regulations for carrying into effect the provisions of this section.[2]

SEC. 3. That it shall be unlawful for any person or persons to deliver to any common carrier, or for any common carrier to transport from one State or Territory to another State or Territory, or from the District of Columbia or Alaska to any State or Territory, or from any State or Territory to the District of Columbia or Alaska, any foreign animals or birds the importation of which is prohibited, or the dead bodies or parts thereof of any wild animals or birds, where such animals or birds have been killed in violation of the laws of the State, Territory, or District in which the same were killed: *Provided,* That nothing herein shall prevent the transportation of any dead birds or animals killed during the season when the same may be lawfully captured, and the export of which is not prohibited by law in the State, Territory, or District in which the same are killed.

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[1] On September 13, 1900, the Secretary of Agriculture (Circular No. 30, Biol. Surv.) extended the list of species which may be imported without permits as follows:

Mammals.—Anteaters, armadillos, bears, chimpanzees, elephants, hippopotamuses, hyenas, jaguars, kangaroos, leopards, lions, lynxes, manatees, monkeys, ocelots, orang-utans, panthers, raccoons, rhinoceroses, sea-lions, seals, sloths, tapirs, tigers, or wildcats.

Birds.—Swans, wild doves, or wild pigeons of any kind.

Reptiles.—Alligators, lizards, snakes, tortoises, or other reptiles.

[2] See Circular No. 101, Division of Customs, issued June 28, 1900; for regulations of the Department of Agriculture see Circular No. 29, Biological Survey, issued July 13, 1900.

SEC. 4. That all packages containing such dead animals, birds, or parts thereof, when shipped by interstate commerce, as provided in section one of this Act, shall be plainly and clearly marked, so that the name and address of the shipper and the nature of the contents may be readily ascertained on inspection of the outside of such packages. For each evasion or violation of this Act the shipper shall, upon conviction, pay a fine of not exceeding two hundred dollars; and the consignee knowingly receiving such articles so shipped and transported in violation of this Act shall, upon conviction, pay a fine of not exceeding two hundred dollars; and the carrier knowingly carrying or transporting the same shall, upon conviction, pay a fine of not exceeding two hundred dollars.

SEC. 5. That all dead bodies, or parts thereof, of any foreign game animals, or game or song birds, the importation of which is prohibited, or the dead bodies, or parts thereof, of any wild game animals, or game or song birds transported into any State or Territory, or remaining therein for use, consumption, sale, or storage therein, shall upon arrival in such State or Territory be subject to the operation and effect of the laws of such State or Territory enacted in the exercise of its police powers, to the same extent and in the same manner as though such animals and birds had been produced in such State or Territory, and shall not be exempt therefrom by reason of being introduced therein in original packages or otherwise. This Act shall not prevent the importation, transportation, or sale of birds or bird plumage manufactured from the feathers of barnyard fowl.

Approved, May 25, 1900.

TARIFF ACT OF 1897.

30 Statutes at Large, pp. 151–201.

CHAP. 11. An Act To provide revenue for the Government and to encourage the industries of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That on and after the passage of this Act, unless otherwise specially provided for in this Act, there shall be levied, collected, and paid upon all articles imported from foreign countries, and mentioned in the schedules herein contained, the rates of duty which are, by the schedules and paragraphs, respectively prescribed, namely:

* * * * * * *

SCHEDULE G: AGRICULTURAL PRODUCTS AND PROVISIONS.

Animals, live.

222. All other live animals [i. e. beside cattle, swine, horses, mules and sheep], not specially provided for in this Act, twenty per centum ad valorem.

Meat products.

275. Meats of all kinds, prepared or preserved, not specially provided for in this Act, twenty-five per centum ad valorem.

FREE LIST.

SEC. 2. That on and after the passage of this Act, unless otherwise specially provided for in this Act, the following articles when imported shall be exempt from duty:

474. * * * wild animals intended for exhibition in zoological collections for scientific and educational purposes, and not for sale or profit.

493. Birds, stuffed, not suitable for millinery ornaments.

494. Birds and land and water fowls.

549. Eggs of birds, fish, and insects: *Provided, however,* That this shall not be held to include the eggs of game birds or eggs of birds not used for food, the importation of which is prohibited except specimens for scientific collections, nor fish roe preserved for food purposes.

561. Furs, undressed.

562. Fur skins of all kinds not dressed in any manner and not specially provided for in this Act.

664. Skins of all kinds, raw (except sheepskins with the wool on), and hides not specially provided for in this Act.

666. Specimens of natural history, botany, and mineralogy, when imported for scientific public collections, and not for sale.

Approved July 24, 1897.

DISTRICT OF COLUMBIA.

30 Statutes at Large, pp. 1012–1013 (as amended by 31 Stat. L., 1091).

CHAP. 417. An Act For the protection of birds, preservation of game, and for the prevention of its sale during certain closed seasons in the District of Columbia.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, [Sec. 1 as amended] That no person shall kill, expose for sale, or have in his or her possession, either dead or alive, any partridge, otherwise quail, between the fifteenth day of March and the first day of November, under a penalty of five dollars for each partridge, otherwise quail, killed, exposed for sale, or had in his or her possession, either dead or alive, and in default thereof to be imprisoned in the workhouse for a period not less than thirty days nor more than six months.

That no person shall kill, expose for sale, or have in his or her possession, either dead or alive, any woodcock between the first day of January and the first day of July, under a penalty of five dollars for each woodcock killed, exposed for sale, or had in his or her possession, either dead or alive, and in default thereof to be imprisoned in the workhouse for a period not less than thirty days nor more than six months.

That no person shall expose for sale or have in his or her possession, either dead or alive, any prairie chicken, otherwise pinnated grouse, between the fifteenth day of March and the first day of September, under a penalty of five dollars for each prairie chicken, otherwise pinnated grouse, exposed for sale, or had in his or her possession, either dead or alive, and in default thereof to be imprisoned in the workhouse for a period not less than thirty days nor more than six months.

That no person shall kill, expose for sale, or have in his or her possession, either dead or alive, any wild turkey or ruffed grouse, otherwise known as pheasant, between the twenty-sixth day of December and the first day of November, except the English, ring-neck, or other pheasants of foreign origin hatched and raised in farm poultry inclosures, under a penalty of five dollars for each wild turkey or ruffed grouse, otherwise known as pheasant, killed, exposed for sale, or had in his or her possession, either dead or alive, and in default thereof to be imprisoned in the workhouse for a period not less than thirty days nor more than six months.

That no person shall kill, expose for sale, or have in his or her possession, either dead or alive, any squirrel or rabbit except the species known as the English rabbit, Belgian hare, between the first day of February and the first day of November, under a penalty of two dollars for each squirrel or rabbit killed, exposed for sale, or had in his or her possession, either dead or alive, and in default thereof to be imprisoned in the workhouse for a period not less than fifteen days nor more than three months.

That no person shall kill, expose for sale, or have in his or her possession, either dead or alive, any wild duck, wild goose, brant, snipe, or plover between the first day of April and the first day of September, under a penalty of five dollars for each wild duck, wild goose, brant, snipe, or plover killed, exposed for sale, or had in his or her possession, either dead or alive, and in default thereof to be imprisoned in the workhouse for a period not less than thirty days nor more than six months.

That no person shall kill, expose for sale, or have in his or her possession, either dead or alive, any water rail or ortolan, reed bird or rice bird, marsh blackbird, or other game bird not previously mentioned, between the first day of February and the first day of September, under a penalty of two dollars for each water rail or ortolan, reed bird or rice bird, marsh blackbird, or other game bird not previously mentioned, killed, exposed for sale, or had in his or her possession, either dead or alive, and in default thereof to be imprisoned in the workhouse for a period not less than fifteen days nor more than six months.

Sec. 2. That no person shall expose for sale or have in his or her possession any deer meat or venison, between the first day of January and the first day of September, under a penalty of ten dollars for such exposure for sale or having in possession, and the forfeiture of all such deer meat or venison to the officer making the arrest, who shall destroy the same; and, in default of fine, to be imprisoned in the workhouse for a period not exceeding sixty days.

Sec. 3. [as amended] That for the purposes of this Act the following only shall be considered game birds: The Anatidæ, commonly known as swans, geese, brant, river and sea ducks; the Rallidæ, commonly known as rails, coots, mud hens, and gallinules; the Limicolæ, commonly known as shore birds, plovers, surf birds, snipe, woodcock, sandpipers, tattlers, and curlews; the Gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges, and quails, and the species of Icteridæ, commonly known as marsh blackbirds and reed birds or rice birds.

That no person shall kill, catch, expose for sale, or have in his or her possession, living or dead, any wild bird other than a game bird, English sparrow, crow, Cooper's hawk, sharpshinned hawk, or great horned owl; nor rob the nest of any such wild bird of eggs or young; nor destroy such nest except in the clearing of land of trees or brush, under a penalty of five dollars for every such bird killed, caught, exposed for sale, or had in his or her possession, either dead or alive, and for each nest destroyed, and in default thereof to be imprisoned in the workhouse for a period not exceeding thirty days: *Provided*, That this section shall not apply to birds or eggs collected for scientific purposes under permits issued by the superintendent of police of the District of Columbia in accordance with such instructions as the secretary of the Smithsonian Institution may prescribe, such permits to be in force for one year from date of issue and nontransferable.

That no person shall trap, net, or ensnare any waterfowl or other wild bird (except the English sparrow), or have in his or her possession any trap, snare, net, or illuminating device for the purpose of killing or capturing any such bird, under a penalty of five dollars for each waterfowl or other wild bird (except the English sparrow) killed or captured, and in default thereof to be imprisoned in the workhouse not exceeding thirty days: *Provided*, That this Act shall not apply to birds or animals heretofore stuffed or to birds or animals hereafter killed in open season and subsequently stuffed.

Sec. 4. That no person shall kill or shoot at any wild duck, wild goose, brant, or wild bird in the nighttime; nor kill or shoot at any wild duck, wild goose, wild brant, or wild bird with any other firearm, gun, or device than such as are habitually raised at arm's length and fired from the shoulder, under a penalty of five dollars for each wild duck, wild goose, wild brant, or wild bird killed, and in default thereof to be imprisoned in the workhouse for a period not exceeding thirty days; and the further penalty of twenty dollars for having any firearm, gun, or device other than the gun habitually used at arm's length, in possession, for the purpose of violating the provisions of this chapter, and, in default, to be imprisoned in the workhouse for a period not exceeding ninety days.

SEC. 5 That to carry out the provisions of this chapter any police officer, game warden having police authority, or health officer, in the District of Columbia, with sworn information presented to such officer or warden, is authorized and empowered to thoroughly inspect any house, boat, market box, stall, cold storage, or other place of whatever character or kind, where he may believe game, meats, or birds, as heretofore mentioned in this chapter, may be stored or kept; and any proprietor, agent, employee, or other person refusing to permit such inspection shall be deemed guilty of interference with the police, and upon conviction therefor, be fined not more than one hundred dollars nor less than twenty-five dollars, and, in default of such payment, to be imprisoned in the United States jail not exceeding six months.

SEC. 6. That any person who shall knowingly trespass on the lands of another for the purpose of shooting or hunting thereon, after due notice by the owner or occupant of lands, shall be liable to such owner or occupant in exemplary damages to an amount not exceeding one hundred dollars. That notice shall be given by erecting and maintaining signboards, at least eight by twelve inches in dimensions, on the borders of the premises, and at least two such signs for every fifty acres; and any person who shall maliciously tear down or in any manner deface or injure any of such signboards shall be liable to a penalty of not less than five dollars for each and every signboard so torn down, defaced, or injured; and, in default, to be imprisoned for a period not exceeding thirty days in the workhouse.

SEC. 7. That there shall be no shooting, or having in possession in the open air the implements for shooting, on the first day of the week, called Sunday, except to transport said implements within or without the District of Columbia; and any person violating the provisions of this section shall be liable to a penalty of not more than twenty dollars for each offense.

SEC. 8. That wherever in this Act possession of any birds, fowls, or meats is prohibited, the fact that the said birds, fowls, or meat were killed or captured outside the District of Columbia shall constitute no defense for such possession.

SEC. 9. That any officer or other person securing the conviction of any violator of any of the provisions of this Act, in the police court or other court of the District of Columbia, shall receive one-half of any fine which may be imposed and paid for such violation, and prosecution shall be brought in the name of the District of Columbia.

SEC. 10. That all acts now in force in the District of Columbia inconsistent with the provisions of this Act be, and the same are hereby, repealed.

Approved, March 3, 1899 (amended March 3, 1901).

ALASKA.

31 Statutes at Large, p. 332.

CHAP. 786. An Act Making further provision for a civil government for Alaska, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

* * * * * * *

SEC. 29. * * * That chapter twelve of title one of said first above-mentioned Act ['An Act to define and punish crimes in the District of Alaska and provide a code of criminal procedure in the District,' approved March 3, 1899] be amended by adding after section one hundred and thirty-eight another section to be numbered one hundred and thirty-nine, and to read as follows:

That no person shall break, take from the nest, or have in possession the eggs of any crane, wild duck, brant, or goose; nor shall any person transport or ship out of said Territory the eggs or the contents of the eggs of any crane, wild duck, brant, or goose, nor shall any person, common carrier or other transportation company carry or receive for shipment such eggs or the contents of said eggs, and any person or company who shall have in possession or receive for shipment or transportation any eggs or the contents of any eggs of the crane, wild duck, brant, or goose shall be guilty of a misdemeanor and upon conviction be punished as provided in this section. Any person or company violating the provisions of this section shall be punished by a fine not exceeding five hundred dollars or imprisonment not exceeding six months.

Approved June 6, 1900.

INDIAN TERRITORY.

Revised Statutes U. S., 1878.

Sec. 2137. Every person, other than an Indian, who, within the limits of any tribe with whom the United States has existing treaties, hunts, or traps, or takes and destroys any peltries or game, except for subsistence in the Indian country, shall forfeit all the traps, guns, and ammunition in his possession, used or procured to be used for that purpose, and all peltries so taken; and shall be liable in addition to a penalty of five hundred dollars.

MOUNT RAINIER NATIONAL PARK.

30 Statutes at Large, pp. 993–995.

Chap. 377. An Act To set aside a portion of certain lands in the State of Washington, now known as the Pacific Forest Reserve, as a public park, to be known as the Mount Rainier National Park.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That all those certain tracts, pieces, or parcels of land lying and being in the State of Washington, and within the boundaries particularly described as follows[1] * * * are hereby dedicated and set apart as a public park, to be known and designated as the Mount Rainier National Park, for the benefit and enjoyment of the people; and all persons who shall locate or settle upon or occupy the same, or any part thereof, except as hereafter provided, shall be considered trespassers and be removed therefrom.

Sec. 2. That said public park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be to make and publish, as soon as practicable, such rules and regulations as he may deem necessary or proper for the care and management of the same. Such regulations shall provide for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities, or wonders within said park, and their retention in their natural condition. * * * He shall also provide against the wanton destruction of the fish and game found within said park, and against their capture or destruction for the purposes of merchandise or profit. He shall also cause all persons trespassing upon the same after the passage of this Act to be removed therefrom, and generally shall be authorized to take all such measures as shall be necessary to fully carry out the objects and purposes of this Act.

Approved March 2, 1899.

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[1] The area of the park is 207,360 acres, or 324 square miles; in other words, about one-fourth the size of Rhode Island.

SEQUOIA, YOSEMITE, AND GENERAL GRANT NATIONAL PARKS.

31 Statutes at Large, p. 618.

CHAP. 791. An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and one, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That

* * * * * * *

The Secretary of War, upon the request of the Secretary of the Interior, is hereafter authorized and directed to make the necessary detail of troops to prevent trespassers or intruders from entering the Sequoia National Park, the Yosemite National Park, and the General Grant National Park, respectively, in California, for the purpose of destroying the game or objects of curiosity therein, or for any other purpose prohibited by law or regulation for the government of said reservations, and to remove such persons from said parks if found therein.

Approved June 6, 1900.

YELLOWSTONE NATIONAL PARK.[1]

28 Statutes at Large, pp. 73–75.

CHAP. 72. An Act To protect the birds and animals in Yellowstone National Park, and to punish crimes in said park, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Yellowstone National Park, as its boundaries now are defined, or as they may be hereafter defined or extended, shall be under the sole and exclusive jurisdiction of the United States; and that all the laws applicable to places under the sole and exclusive jurisdiction of the United States shall have force and effect in said park: *Provided, however* That nothing in this Act shall be construed to forbid the service in the park of any civil or criminal process of any court having jurisdiction in the States of Idaho, Montana, and Wyoming. All fugitives from justice taking refuge in said park shall be subject to the same laws as refugees from justice found in the State of Wyoming.

SEC. 2. That said park, for all the purposes of this Act, shall constitute a part of the United States judicial district of Wyoming, and the district and circuit courts of the United States in and for said district shall have jurisdiction of all offenses committed within said park.

SEC. 3. That if any offense shall be committed in said Yellowstone National Park, which offense is not prohibited or the punishment is not specially provided for by any law of the United States or by any regulation of the Secretory of the Interior, the offender shall be subject to the same punishment as the laws of the State of Wyoming in force at the time of the commission of the offense may provide for a like offense in the said State; and no subsequent repeal of any such law of the State of Wyoming shall affect any prosecution for said offense committed within said park.

SEC. 4. That all hunting, or the killing, wounding, or capturing at any time of any bird or wild animal, except dangerous animals, when it is necessary to prevent them from destroying human life or inflicting an injury, is prohibited within the limits of said park; nor shall any fish be taken out of the waters of the park by means of seines, nets, traps, or by the use of drugs or any explosive substances or compounds, or in any other way than by hook and line, and then only at such seasons and in such times and manner as may be directed by the Secretary of the Interior. That the Secretary of the Interior shall make and publish such rules and regulations as he may deem necessary and proper for the management and care of the park and for the protection of the property therein, especially for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities, or wonderful objects within said park; and for the protection of the animals and birds in the park, from capture or destruction, or to prevent their being frightened or driven from the park; and he shall make rules and regulations governing the taking of fish from the streams or lakes in the park. Possession within the said park of the dead bodies, or any part thereof, of any wild bird or animal shall be prima facie evidence that the person or persons having the same are guilty of violating this Act. Any person or persons, or stage or express company or railway company, receiving for transportation any of the said animals, birds, or fish so killed, taken, or caught shall be deemed guilty of a misdemeanor, and shall be fined for every such offense not exceeding three hundred dollars. Any person found guilty of violating any of the provisions of this Act or any rule or regulation that may be promulgated by the Secretary of the Interior with reference to the management and care of the park, or for the protection of the property therein, for the preservation from injury or spoliation of timber, mineral deposits, natural curiosities or wonderful objects within said park, or for the protection of the animals, birds and fish in the said park, shall be deemed guilty of a misdemeanor, and shall be subjected to a fine of not more than one thousand dollars or imprisonment not exceeding two years, or both, and be adjudged to pay all costs of the proceedings.

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[1] For an interesting history of this act see 'Hunting in Many Lands' (Boone & Crockett Club series), New York, pp. 403–423, 1895.

That all guns, traps, teams, horses, or means of transportation of every nature or description used by any person or persons within said park limits when engaged in killing, trapping, ensnaring, or capturing such wild beasts, birds, or wild animals shall be forfeited to the United States, and may be seized by the officers in said park and held pending the prosecution of any person or persons arrested under charge of violating the provisions of this Act, and upon conviction under this Act of such person or persons using said guns, traps, teams, horses, or other means of transportation such forfeiture shall be adjudicated as a penalty in addition to the other punishment provided in this Act. Such forfeited property shall be disposed of and accounted for by and under the authority of the Secretary of the Interior.

[SEC. 5. Provides for appointment of a United States commissioner who shall reside in the park.]

[SEC. 6. Provides for appointment of deputy marshals for the park and for holding sessions of the United States district and circuit courts in the park.]

[SEC. 7. Provides for payment of salary of $1,000 per annum and fees to the commissioner and of fees to the United States attorney, marshal, and their assistants.]

[SEC. 8. Provides that costs and expenses of cases under this act shall be certified, approved, and paid as in courts of the United States.]

[SEC. 9. Authorizes the Secretary of the Interior to erect a suitable building in the park at a cost not exceeding $5,000, for jail, and also for office of the commissioner.]

SEC. 10. That this Act shall not be construed to repeal existing laws conferring upon the Secretary of the Interior and the Secretary of War certain powers with reference to the protection, improvement, and control of the said Yellowstone National Park.

Approved May 7, 1894.

FOREST RESERVES.

30 Statutes at Large, p. 35.

CHAP. 2. An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and ninety-eight, and for other purposes.

Be it enacted by the Senate and Hovse of Representatives of the United States of America in Congress assembled, That

* * * * * * *

The Secretary of the Interior shall make provisions for the protection against destruction by fire and depredations upon the public forests and forest reservations which may have been set aside or which may be hereafter set aside under the said Act of March third, eighteen hundred and ninety-one, and which may be continued; and he may make such rules and regulations and establish such service as will insure the objects of such reservations, namely, to regulate their occupancy and use and to preserve the forests thereon from destruction; and any violation of the provisions of this Act or such rules and regulations shall be punished as is provided for in the Act of June fourth, eighteen hundred and eighty-eight, amending section fifty-three hundred and eighty-eight of the Revised Statutes of the United States. [Penalty for unlawful cutting or destroying of timber, a fine of not more than $500 or imprisonment more than 12 months, or both fine and imprisonment in the discretion of the court.]

Approved June 4, 1897.

GOVERNMENT RESERVATIONS NOT OTHERWISE PROVIDED FOR.

30 Statutes at Large, p. 717.

CHAP. 576. An Act To protect the harbor defenses and fortifications constructed or used by the United States from malicious injury, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

* * * * * * *

SEC. 2. That when any offense is committed in any place, jurisdiction over which has been retained by the United States or ceded to it by a State, or which has been purchased with the consent of a State for the erection of a fort, magazine, arsenal, dockyard, or other needful building or structure, the punishment for which offense is not provided for by any law of the United States, the person committing such offense shall, upon conviction in a circuit or district court of the United States for the district in which the offense was committed, be liable to and receive the same punishment as the laws of the State in which such place is situated now provide for the like offense when committed within the jurisdiction of such State, and the said courts are hereby vested with jurisdiction for such purpose; and no subsequent repeal of any such State law shall affect any such prosecution.

Approved July 7, 1898.

STATE LAWS.

The following digest of the laws of the various States relates chiefly to the transportation and sale of game. Sections which contain prohibitions against transportation and sale *merely during close seasons* are omitted, since they are so common that their repetition seems unnecessary. Hence no extracts will be found from the laws of Kentucky, or Louisiana, and the only section quoted from the laws of Mississippi is one defining game. Definitions of game are quoted also from the statutes of other States which contain such definitions, and a few other sections have been inserted when necessary for the sake of clearness; but as far as possible the extracts have been restricted to those treating of the trade in game. As a rule the statutes are quoted verbatim, but in some cases abstracts only are given, which are placed in brackets.

ALABAMA.

General Laws of 1899, pp. 77–83.

Sale: Sec. 5. * * * It shall be unlawful at any period or season of the year to kill, entrap, or pursue with intent to kill or entrap any deer, fawn, wild turkey, pheasant, grouse, quail, partridge, woodcock or squirrel, in any part of this State, for the purpose of selling the same. It shall be unlawful for the proprietor, manager, clerk or agent of any market, or other person, firm or corporation, to purchase, sell or expose for sale, any deer, fawn, wild turkey, pheasant, grouse, quail, partridge, woodcock or squirrel, killed or entrapped within this State. That it shall be unlawful for the proprietor, manager, clerk or agent of any market, or other person, firm or corporation, to purchase for the purpose of again selling the same, any deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock killed or entrapped within this State. Whosoever shall offend against any of the provisions of this section, shall, on conviction, be fined not less than one hundred dollars for every deer, fawn, so taken, purchased or sold, and twenty-five dollars for every wild turkey, pheasant, grouse, quail, partridge or woodcock so taken, purchased or sold, or by sentence to imprisonment in the county jail for a period of one day for each dollar of penalty imposed.

Shipment: Sec. 6. * * * That no person or persons, company or corporation, or the agent or employee thereof, shall at any time, catch, take or kill, or have in his, her or its possession or under his, her or its control, any of the birds or game mammals of this State, the killing of which at any or all times is prohibited by the laws of this State, with intent to ship or remove the same beyond the limits of this State, or with intent to aid in the shipment or removal thereof out of this State; and it shall not be lawful for any person or persons, railroad company, express company, stage driver, or any company or corporation, or person or persons, acting in the capacity of a common carrier, their officers or employees, to knowingly receive for transportation or transport or remove beyond the limits of the State, any of the game birds or game mammals mentioned in this act. [Penalty, $50–$100 for each offense.]

Counties excepted: Sec. 14. * * * Provided, the provisions of this act shall not apply to the counties of Hale, Tuscaloosa, Marengo, Wilcox, Marion, Greene, Pickens, Coosa, Clay, Choctaw, Calhoun, Limestone, Clarke, Washington, Chambers, Lawrence, Coffee, Autauga, St. Clair, Franklin, Geneva, Walker, Randolph, Lowndes, Pike, Lauderdale, Butler, Bullock, Dale, Henry, Russell, Cleburne, Lee, Winston, Hale, Blount, Baldwin, Dallas, Chilton, Talladega, Escambia, Elmore, Lamar, Sumter, Fayette, De Kalb, Mobile, Bibb, Cherokee, Etowah, Marshall, Barbour, Jefferson, Tallapoosa, Shelby, Crenshaw, Colbert, Conecuh and Jackson, and it shall not apply to Montgomery County except in so far as game birds and mammals are concerned.

Approved February 8, 1899

ALASKA.

[No general provisions concerning transportation or sale. For prohibition against shipment of eggs of certain game birds see pp. 75–76.]

ARIZONA.

Acts of 1901, No. 57.

Propagation: Sec. 2. Every person who, in the Territory of Arizona, between the 1st day of March and the 15th day of October in each year, shall hunt, pursue, take, kill or destroy, or have in his possession, dead or alive, except for purposes of propagation, any quail, bob-white, partridge, grouse, pheasant or any kind of wild duck, goose, brant, snipe or rail, shall be guilty of a misdemeanor.

Shipment: Sec. 15. Any officer, agent, servant or employee of any railroad company, express company, or other common carrier, or private individual, who shall have or receive for transportation, or who shall transport, or assist in transporting, any of the game animals, or game birds,[1] or fish mentioned in this Act, at or during the time when the killing or taking of the same is prohibited, or for transportation or carriage outside the limits of this Territory at any time, shall be guilty of a misdemeanor.

Sale: Sec. 17. Every cold storage company, or person keeping a cold storage warehouse, or tavern or hotel keeper, restaurant or eating house keeper, market man, or any other person who shall at any time sell, or expose for sale in this Territory, any hide, head, horns, or meat of any male or female deer, antelope, elk, mountain sheep or mountain goat, or any carcass of any wild turkey, dove, quail, bob-white, partridge, pheasant or grouse, or of any wild duck, goose, brant, snipe or rail, or any brook, mountain or rainbow trout, or any black bass, strawberry bass or crappie, shall be guilty of a misdemeanor.

Penalties: Sec. 18. Any person found guilty of a violation of any of the provisions of the various sections of this Act, shall, upon conviction, be fined not more than $100 and costs, and in default of the payment of such fine and costs shall be imprisoned in the county jail for a period not to exceed one day for each dollar of such fine and costs unpaid. * * *

Eggs: Nothing in this Act shall be construed to prohibit the U. S. Fish and Game Commissioner, or the Fish and Game Commissioners of the Territory of Arizona, from taking the eggs of any of the game birds mentioned in this Act at any time, for the purpose of artificial hatching or propagation, or for scientific purposes, and in such amounts as they deem proper.

Approved, ——, 1901.

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[1] Deer, elk, mountain sheep, mountain goat, quail, bob-white, partridge, grouse, pheasant, wild turkey, snipe, rail, wild duck, goose, brant. The sale of doves is prohibited (by sec. 17), but killing and shipment are not.

ARKANSAS.

Sandels and Hill's Digest of the Statutes, 1897, Chap. LXIX, pp. 844–848.

Export: Sec. 3414. * * * It shall be lawful to export from any part of this State, beavers, opossums, hares or rabbits, ground hogs or woodchucks, raccoons, squirrels, snipes or plovers, ducks and geese, when shipped openly.

Sec. 3416. It shall be unlawful for any railroad company, steamboat, express company, or any other common carrier, to take for carriage any fish or game consigned to points beyond the limits of this State.

Examining packages: Sec. 3417. All such common carriers may refuse to receive any package which they may suppose contains fish or game designed for export, and may cause said package to be opened, or may satisfy themselves in any other way that said package does not contain game or fish.

Penalties: Sec. 3418. Any common carrier violating the provisions of this act, shall be guilty of a misdemeanor and upon conviction shall be fined in any sum not less than $50, nor more than $200.

Shipment: Sec. 3435. It shall be unlawful for any railroad company, express company, steamboat company, or other company, or corporation, or private person, to have in possession or receive for transportation or carriage, or for any other purpose whatsoever, any of the game or birds mentioned in section 3431 [deer, quail or Virginia partridge, pinnated grouse or prairie chicken, wild turkey], during the season when the killing, catching or injuring the same is prohibited. (See p. 21.)

Penalties: Sec. 3436. [Violation of any of the provisions of this act a misdemeanor, punishable by a fine $3–$10 for each bird or nest of eggs, and $10–$20 for each deer, together with costs of prosecution.]

Acts of 1901, No. CLXXIV, p. 328.

Quail—White County: Sec. 1. * * * It shall also be unlawful to catch or kill for sale shipping or barter or giving away of any quail in White County, and Barren and Glaize Townships, Jackson County, *Providing* nothing in this bill shall prevent any person or persons to catch or kill such quail for their individual or home consumption.

Penalty: Sec. 2. Any person violating the provisions of this Act shall be guilty of a misdemeanor and upon conviction shall be fined in any sum not less than twenty-five nor more than fifty dollars for each offense.

Approved, May 23, 1901.

CALIFORNIA.

Penal Code, 1872, as amended by Statues of 1901, Chap. CCLXXIV, pp. 819–823.

Hides: [Sec.] 626h. Every person who buys, sells, offers or exposes for sale, transports or carries, or has in his possession, the skin, pelt, or hide of any female deer, or spotted fawn, or any deer hide, or pelt from which the evidence of sex has been removed, is guilty of a misdemeanor.

Sale: [Sec.] 626k. Every person who buys, sells, offers or exposes for sale, barter, or trade, any quail, partridge, pheasant, grouse, sage hen, ibis, or plover, or any deer meat, whether taken or killed in the State of California or shipped into the State from any other State, Territory, or foreign country, is guilty of a misdemeanor.

Propagation: [Sec.] 626l. Nothing in this Act shall be held to prohibit the possession for scientific purposes, or the taking alive for the purpose of propagation, any of the animals or birds mentioned in this section; *provided*, permission to take and possess said birds or animals for said purposes shall have been first obtained in writing from the Game Commissioner[1] or the State Board of Fish Commissioners, and said permission shall accompany the shipment of said birds or animals, and shall exempt them from seizure while passing through any part of the State.

Export: [SEC.] 627a. Every railroad company, express company, transportation company, or other common carrier, its officers, agents, and servants, and every other person who transports, carries, or takes out of this State, or who receives for the purpose of transporting from the State, any deer, deerskin, buck, doe or fawn, or any quail, partridge, pheasant, grouse, prairie chicken, dove, wild pigeon, or any wild duck, rail, snipe, ibis, curlew, or plover, except for the purposes of propagation, or who transports, carries or takes from the State, or receives for the purpose of transportation from the State, any such animal or bird, or any part of the carcass thereof, is guilty of a misdemeanor. The right to transport for the purposes of propagation, or for scientific purposes, must first be obtained by permit in writing[2] from the Game Commissioner,[1] or the State Board of Fish Commissioners.

Restrictions on shipping: [SEC.] 627b. Every railroad company, steamship company, express company, transportation company, transfer company, and every other person, who ships, or receives for shipment, or transportation, from any one person, during any one day, more than twenty-five quail, partridge, grouse, or sage hen, snipe, curlew, or ibis, or more than fifty doves, or more than twenty rail, or more than fifty wild ducks, or who transports any of said birds, or any deer, in any quantity, unless such birds or deer are at all times in open view, and labeled with the name and residence of the person by whom they are shipped, is guilty of a misdemeanor.

Trapping for sale: [SEC.] 631. Every person who takes, kills, or destroys, by the use of any net, pound, cage, trap, set line or wire, any quail, partridge, grouse, wild duck, curlew, or ibis, or who transports, buys, sells, or gives away, offers or exposes for sale, or has in his possession, any of the said birds that have been taken, killed, or captured by the use of any net, pound, cage, trap, set line or wire, whether taken in the State of California, or shipped into the State from any other State, Territory, or foreign country, is guilty of a misdemeanor; *provided*, that the same may be taken for purposes of propagation, or for scientific purposes, written permission having first been obtained from the Game Commissioner,[1] or the State Board of Fish Commissioners.

Penalties: [SEC. 631a. Every person found guilty of a violation of any of the provisions of Sections 626*h*, 626*k*, 626*m*, Sections 627*a*, 627*b*, and Section 631 must be fined in a sum not less than twenty-five dollars nor more than five hundred dollars, or imprisoned in the county jail of the county in which the conviction shall be had, not less than twenty-five days nor more than one hundred and fifty days, or by both such fine and imprisonment.]

COLORADO.

Session Laws of 1899, chap. 98, pp. 188–217.

DIVISION A. GENERAL PROVISIONS.

Regulations: SEC. 7. The commissioner shall have power to prescribe such rules, regulations and forms as may be required to carry out the true intent of this act, and not inconsistent herewith.

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[1] There is no Game Commissioner in the State.

[2] Sec. 435 of the Penal Code provides: "Every person who commences or carries on any business, profession, trade, or calling for the transaction or carrying on of which *a license is required* by any law of this State, without taking out or procuring the license prescribed by such law, is guilty of a misdemeanor."

Property of State: Sec. 16. All game and fish now or hereafter within this state not held by private ownership, legally acquired, and which for the purposes of this act shall include all the quadrupeds, birds and fish mentioned in this act, are hereby declared to be the property of the state, and no right, title, interest or property therein can be acquired or transferred, or possession thereof had or maintained except as herein expressly provided.

DIVISION B. GENERAL REGULATIONS.

Sale: Sec. 1. No person shall at any time of the year, or in any manner, pursue, take, wound or kill any bison, buffalo, elk, deer, antelope, mountain sheep or beaver, or any of the following wild birds, viz: Turkey, prairie chicken, sage chicken, grouse, quail, pheasant, partridge, ptarmigan, duck, goose, brant, swan, crane, water fowl, pigeon, dove, snipe or curlew, * * * or sell, offer or expose for sale or have the same in possession, except as permitted by this act. * * *

Big game—Sex: Sec. 3. No person shall have in possession or transport the carcass of any game quadruped or any considerable portion of such carcass unless the same has thereon the natural evidence of its sex sufficient to enable such sex to be readily determined by ordinary inspection.

Sale prohibited: Sec. 7. (9) [No person shall dispose of to another, except by actual donation, any edible part of game or fish taken or killed under the provisions of this section (which provides open seasons, manner and purpose of capture, and limits the number of each kind of game which may be taken in the State)].

DIVISION C. PARKS.

Invoice, game from parks: Sec. 16. When the proprietor of any licensed park or lake of class A [in whole or part on land held by private ownership or acquired for irrigation purposes] shall sell or dispose of any game or fish as herein provided, he shall at the same time deliver to the purchaser or donee or attach thereto an invoice signed by such proprietor or his agent, stating the number of the license and name of such park, or lake, the date of disposition, the kind, and as near as practicable the number and weight of such game or fish, the name and address of the purchaser, consignee or donee. Such invoice shall authorize transportation within this state, possession and use for thirty days after this date * * *

Sec. 17. Such proprietor or his agent shall at the same time mail, postpaid, a duplicate of such invoice to the commissioner at Denver * * *

Shipping game from parks: Sec. 18. When any such game or fish, for which an invoice is required, is to be shipped by rail, express, or other carrier, public or private, the invoice shall be securely attached thereto or to the package containing the same, in plain sight, and the same may then be lawfully carried and delivered within this state to the consignee named in such invoice.

Sale of game from parks: Sec. 19. If such game or fish is held, exposed or offered for sale or sold by the consignee or kept in any storage, hotel, restaurant, cafe or boarding house, such invoice shall be kept attached thereto as aforesaid until the same shall have been prepared for consumption.

Sec. 20. In case of a sale or disposition of a part of such game or fish the vendor shall at the same time make a copy of such invoice and indorse thereon the date of sale, the number and kind of game or fish so disposed of and the name of the purchaser, and sign and deliver the same to the purchaser or donee, who shall keep it attached as aforesaid until the game or fish is prepared for consumption, and the same shall have the same force and effect as the original invoice.

Misstatements: Sec. 21. Any wilful misstatement in or any omission of a substantial requirement from any invoice or copy thereof, shall render the same void and be deemed a violation of this act, and the possession of such game or fish shall be unlawful, and the possession of any game or fish without such invoice or a copy thereof attached thereto when so as above required shall be unlawful.

DIVISION D. TRANSPORTATION.

Importation· SECTION 1. No game or fish shall be brought into this state from any other state or territory except as provided in this division.

Importation for propagation: SEC. 2. Game and fish intended to be used for propagation in or stocking parks or waters within this state may be brought into this state from any other state or territory, and the commissioner shall issue certificates therefor without charge.

Lawful importation: SEC. 3. Game or fish intended for any purpose other than those mentioned in the last preceding section may be brought into this state only from those states and territories the laws of which at the time of such importation do not prohibit the importation and sale therein of game and fish from this state, and game and fish so imported into this state may be held and disposed of only as provided in this division.

Imported game, Sale: SEC. 4. No person shall sell, offer, expose or keep for sale any game or fish brought into this state from any other state or territory, except in the original package, condition, number and quantity in which the same were brought into this state, until he shall have procured from the commissioner a certificate dated and signed by him stating the kind, and, as near as practicable, the number of game or fish referred to therein, which certificate shall be kept constantly and publicly exposed with such game or fish so long as they are kept for sale. No such certificate shall be granted or valid for more than thirty days after its date. * * *

Imported game, Storage permit: SEC. 5. If any person in the lawful possession of game or fish so imported shall desire to retain the same beyond the thirty days as provided in the importation certificate, he shall apply to the commissioner and procure from him an importation storage permit for a period not exceeding thirty days after the expiration of the importation certificate. Such permit shall authorize the possession, transportation within this state, storage and sale of the same during the period therein named * * *

Imported game, Invoice: SEC. 6. If the importer shall sell or dispose of the same, he shall make out and give to the purchaser or donee an invoice signed by him or his authorized agent, and containing the name and address of the purchaser or donee, the kind and number of game or fish and the number and date of the commissioner's importation certificate or storage permit under which the same was sold. * * *

SEC. 7. Such invoice shall entitle the person therein named to transport within this state, store, hold, use or sell the same at any time of year for a period not exceeding thirty days after the date of the certificate or permit under which it is issued.

SEC. 8. In case the purchaser or donee shall desire to redispose of the same he shall endorse on such invoice the name of the subsequent purchaser or donee and his own name, and deliver the same to the purchaser or donee. In case he shall desire to dispose of a portion only he shall make a true copy of such invoice and endorse the same as aforesaid and deliver it to the subsequent purchaser or donee. Such original or copy so endorsed shall have the same force and effect as the original.

Shipping permits: SEC. 11. When any person lawfully in possession of game or fish shall desire to transport the same within this state, the transportation of which is not herein otherwise provided for, or out of this state, the commissioner may, upon being satisfied that the possession and transportation is not in violation of the spirit of this act, grant a permit therefor, and thereafter during the period of ten days after its date, such transportation shall be lawful between the points therein named. * * *

Shipment: Sec. 12. No railroad company, express company, stage company or other public carrier, messenger, baggage man, or person in charge of any public conveyance, nor any agent thereof, shall receive or store for transportation, or transport into, or within, this State, any game or fish except as follows, namely:

(1) When there is attached thereto a proper and valid certificate or permit signed by the commissioner, or having a facsimile of his signature thereon and on its face authorizing transportation of the article named therein, and during the period therein stated.

(2) At any time of year when the same is shipped from a private park or lake and has attached thereto a proper and valid invoice as required in Division C of this act.

(3) At any time of year when the same is in charge of the commissioner, or some person acting for him and under his written authority, or an officer having seized the same under the provisions of this act, or a game or fish commissioner or warden of the United States or some other State, Territory or foreign country.

(4) At any time of year when the same has been seized and sold by an officer and has attached thereto an invoice as provided in this division, and for thirty days after the date of such invoice.

(5) When there is attached thereto a proper and valid importer's invoice, authorizing transportation of the article therein named and during the period therein stated.

(6) At any time of the year when the same are small fry or fish eggs for stocking purposes.

(7) At any time of the year when the same is being transported from some other State or Territory into this State in conformity with section 2 or 3 of this division.

(8) During the open season therefor and for five days thereafter when presented for shipment in lawful number or quantity. [See pp. 22, 45.]

Export: Sec. 13. Game or fish may be transported out of this State only when accompanied by a permit from the commissioner authorizing the same, as provided in section 11 of this division, or when being transported from some other State or Territory where taken or killed, through this State to some other State or Territory.

Marking packages: Sec. 14. Whenever any game or fish is presented for transportation or transported in a box, barrel, package, or other covering, so the game or fish is not plainly visible, the consignor shall put on the outside of such covering a plain mark or label indicating the true contents, and the proper invoice, certificate, or permit, when one is required, shall be attatched [attached] to the outside of the covering.

Sec. 15. Nothing herein shall make such carrier liable for transportation of game or fish when the same is transported without charge or waybill and in the possession of a passenger; but such fact shall not exempt the same from seizure, if unlawfully taken, killed, held in possession, or transported.

DIVISION G. PENALTIES.

Attempt at violation: Sec. 1. Every attempt to violate any provision of this act shall be punishable to the same extent as an actual violation thereof, and any such attempt or violation by an agent, clerk, officer, or employe, while acting for a corporation, shall render such corporation liable also, and an accessory may in all cases be prosecuted and punished as a principal.

Penalties: Sec. 4. Every person or officer violating any of the provisions of this act, * * * shall be guilty of a misdemeanor and be punished by a fine of not less than $10 nor more than $500, or by imprisonment in the county jail not less than ten days nor more than six months, or by both such fine and imprisonment.

Approved, April 27, 1899.

Regulations Prescribed by the State Game Commissioner, May 1, 1899.

In pursuance of authority conferred by law on the commissioner [see Div. A, sec. 7], the following additional regulations, forms and instructions are prescribed:

Domestic game, Sale prohibited: Sec. 12. Domestic game and fish taken as above cannot lawfully be disposed of to another except by actual bona fide donation. When disposed of in any other way they are not lawfully in possession and are subject to seizure.

Sec. 13. When such game or fish have been donated to another the maker of the certificate should endorse the fact on the certificate and sign the same.

Sec. 14. Such certificate when correctly filled in, dated and signed by the person originally taking the game or fish therein described (and indorsed as above when donated to another) will be deemed prima facie evidence of lawful possession, and authority to transport and store the same within the state during the open season and for five days thereafter.

Imported game: Sec. 19. Game and fish for general use may be imported from states and territories which do not prohibit the sale therein of game and fish from this state. As at present advised, none of the western states or territories have laws of that character, and therefore until further notice, importations may be made from any state or territory.

Sec. 21. Before breaking bulk and exposing or offering imported game or fish for sale (or before using, if intended for use by the person importing the same), the above [an] invoice must be presented to the commissioner and an importation certificate procured as provided in the law, authorizing sale and use within the state.

Sec. 22. An importation certificate is not a license to sell generally, but applies only to the shipment for which obtained. A certificate must be obtained for each shipment. For game or fish of kinds not protected by the law, no certificate is required.

CONNECTICUT.

Public Acts of 1901, chap. 140, pp. 1276–1278.

ARTICLE II.

Shipment: Sec. 16. Quail, woodcock, and partridge or ruffed grouse, shall not be transported in this state except when accompanied by the actual owner, and no person shall transport or accompany, within the limits of this state, more than thirty-six partridges or ruffed grouse in any calendar year. No person shall at any time kill any quail, woodcock, partridge, or ruffed grouse, for the purpose of transporting the same beyond the limits of this state or transport any such birds in any package, unless the kind and number of such birds shall be plainly marked on the outside of said package; or shall transport or have in his possession, with intent to procure the transportation beyond said limits, any of such birds killed within this state. The reception, by any person or common carrier within this state, of any such bird or birds for shipment in an unmarked package or addressed to a point without the state shall be *prima facie* evidence that said bird or birds were killed within the state for the purpose of carrying the same beyond its limits.

Game birds defined: Sec. 19. * * * For the purposes of this act the following only shall be considered game birds: The Anatidæ, commonly known as swans, geese, brant, and river and sea ducks; the Rallidæ, commonly known as rails, coots, mud-hens, and gallinules; the Limicolæ, commonly known as shore birds, plovers, surf birds, snipe, woodcock, sandpipers, tatlers, and curlews; the Gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges, and quails. * * *

Penalties: Sec. 25. Every person who shall violate any of the provisions of this article shall be punished by a fine of not less than ten dollars nor more than fifty dollars and by an additional fine of ten dollars for each bird or part of bird taken or possessed in violation thereof.

Approved, June 14, 1901.

DELAWARE.

Laws of 1891, Vol. XIX, chap. 137, pp. 268-269.

Shipment: Sec. 1. (As amended by laws of 1893, chap. 654.) That from and after the passage of this act it shall be unlawful for any person or persons to ship, take, or carry away, or attempt to ship, take, or carry out of this State, any quail, partridge, robin, woodcock, or wild rabbit, dead or alive, for purposes of sale or otherwise. And it shall also be unlawful for any person who is a nonresident of this State to ship, take, or carry away, or attempt to ship, take, or carry away, any quail, partridge, robin, woodcock, Wilson or English snipe, or wild rabbit, dead or alive, from one county to another county in this State, for the purposes of sale or otherwise.

Penalties: If any person shall ship, take, or carry away, or attempt to ship, take, or carry away, any birds or animals named in this act out of this State, or from one county to another county in this State, contrary to the provisions of this act, he shall be deemed guilty of a common nuisance, and upon conviction thereof before any justice of the peace in this State shall be fined five dollars for each and every bird or animal so shipped or taken or carried away, or so attempted to be shipped, or taken or carried away contrary to the provisions of this act, and upon failure to pay said fine and the costs of prosecution he shall be committed to the jail of the county in which such offense occurred for the period of thirty days, unless said fine and costs be sooner paid; one half said fine shall be paid into the treasury of the county and the other half to the informer.

Passed, April 20, 1891.

Laws of 1893, Vol. XIX, chap. 655, p. 802.

Sale: Sec. 3. That from and after the passage of this act it shall be unlawful for any person or persons within this State at any time to buy, for purposes of profit or sale, any partridge, quail, or pheasant, and all acts or parts of acts authorizing the issuing of licenses to dealers in said birds be and the same are hereby repealed as far as they relate to the buying of said birds. Any person or persons violating the provisions of this section shall be fined as prescribed in section 5, chapter 507, vol. 17, Laws of Delaware.

Passed, May 4, 1893.

Laws of 1901, Vol. ——, chap. ——.

Game birds defined: Sec. 1. * * * For the purposes of this Act, the following only shall be considered game birds: The Anatidæ, commonly known as swans, geese, brant and river and sea ducks: The Rallidæ, commonly known as rails, coots, mud-hens and gallinules: The Limicolæ, commonly known as shore birds, plovers, surf-birds, snipe, wood-cock, sandpipers, tatlers and curlews: The Gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges and quails: also the reed-bird of the Icteridæ.

Approved, March 9, 1901.

DISTRICT OF COLUMBIA.

[Prohibitions against sale refer only to close seasons. No prohibition against transportation. For full law see pp. 73-75.]

FLORIDA.

Laws of 1899, chap. 4784, p. 174.

Sale: SEC. 2. That no person or persons, firm or corporation shall sell, expose for sale or have in his, her, its or their possession for sale at any time any wild deer, venison or deer hide and it shall be unlawful for any person or persons, firm or corporation to ship or transport any deer, venison or deer hide or hides in this State for sale at any time. and it shall be unlawful for any common carrier to transport any deer, venison or deer hide or hides in this State at any time to be sold. Any person or persons, firm or corporation violating the provisions of this section shall, upon conviction, be punished by a fine of not less than fifty dollars, nor more than two hundred dollars or be imprisoned in the county jail at hard labor not more than three nor less than one month.

Shipment: SEC. 4. That any person or persons, firm or corporation who shall ship any deer hide or hides, venison, wild turkey, quail or partridge beyond the limits of the county in which the same was killed, shall, upon conviction, be deemed guilty of a misdemeanor and punished as prescribed in section one of this act [penalty, $25 to $100 or three to six months' hard labor]. And any common carrier, agent or employee of any such carrier, who shall receive for carriage or permit the carriage of any such deer, hide, venison, wild turkey, quail or partridge by said common carrier across any county line in this State shall, upon conviction, be punished as prescribed in Section one of this act; *Provided*, Hunting parties may take their own game home with them in this State, but not for sale.

Approved May 4, 1899.

Laws of 1901, chap. ——.

Game birds defined: SEC. 1. * * * For the purposes of this Act the following only shall be considered game birds: The Anatidæ, commonly known as swans, geese, brant, and river and sea ducks; the Rallidæ, commonly known as rails, coots, mud-hens, and gallinules; the Limicolæ, commonly known as shore birds, plovers, surf birds, snipe, woodcock, sandpipers, tatlers, and curlews; the Gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges, and quails, also turtle doves, tame and wild pigeons and robins.

Approved May 29, 1901; in force July 28, 1901.

GEORGIA.

Acts of 1899, Part I, Title 8, No. 373, p. 96.

Trapping for sale: SEC. I. * * * That from and after the passage of this Act, it shall be unlawful for any person to trap, net, kill, or in any way take, for the purpose of selling the same, except upon his own land during the hunting season, wild turkeys, quail, doves or deer.

License: SEC. II. Be it further enacted, That any person desiring to kill, trap, net, or in any way take, for the purpose of selling the same, except upon his own land, any of the game mentioned in the foregoing section, shall before doing so, pay to the treasurer of the county in which he desires to kill, net, trap, or take such game, the sum of twenty-five dollars, and upon the exhibition of such receipt to the ordinary of such county, the ordinary shall issue to such person a license to kill, trap, net, or take such game in said county for the space of twelve months from the date of said license, and no longer; and such person at the time of procuring said license shall register his name as a licensed hunter in a book to be kept for that purpose by the ordinary. A license shall be procured and registration made in each county wherein said person proposes to carry on said business; *provided*, that the provisions of this bill shall not be in effect until recommended by the grand jury of the county desiring it.

Penalty: Sec. III. Be it further enacted, That any person violating the provisions of this Act shall be punished as for a misdemeanor.

Approved December 20, 1899.

Acts of 1899, Part I, Title 8, No. 380, pp. 98–99.

Export: Sec. I. * * * That from and after the passage of this Act, it shall be unlawful for any person or persons, firm or corporation, to export or ship, send or carry beyond the limits of said State [Georgia], any partridge or quail at any season of the year.

Penalties: Sec. III. Be it further enacted, That any person violating the provisions of this Act, upon conviction shall be punished as prescribed in section 1039 of volume 3 of the Code of 1895. [Penalty for misdemeanor, fine not exceeding $100, imprisonment not to exceed 6 months or hard labor not to exceed 12 months.]

Approved December 20, 1899.

IDAHO.

General Laws, 1899, pp. 429–431.

Hides: Sec. 11. It shall be unlawful for any person, or persons, or agents or employees of any association or corporation to buy or sell the hides of any of the animals mentioned in any of the preceding sections of this Act. [Deer, elk, moose, caribou, antelope, mountain sheep, mountain goat. Penalty, $50 to $100 for each animal.]

Sale: Sec. 19. It shall be unlawful for any person or persons, agent or employee of any association or corporation to buy or sell or to expose or offer for sale, any of the animals, birds, or fish, or any part or parts of any such animal, bird or fish protected by the provisions of this Act at any time of the year. [Animals and birds protected: Deer, elk, moose, caribou, antelope, mountain sheep, mountain goat, quail, partridge, pheasant, Mongolian pheasant, grouse, prairie chicken, sage hen, duck, goose, swan.]

Specimens excepted: Sec. 20. If any person or persons, agent or employee of any association or corporation shall be found in possession of any of the animals, birds, or fish, or any part or parts of any of the animals, birds, or fish protected by this Act, between the dates within which the killing, taking, ensnaring, entrapping, or destroying of the same is declared to be unlawful, it shall be deemed prima facie evidence that such person or persons, agent or employee killed, ensnared, trapped, or destroyed the same in violation of this Act. *Provided*, That the provisions of this section shall not apply to persons having in possession for preservation any stuffed birds or animals, or heads or horns of animals not taken or killed in violation of the provisions of this Act or other game laws of the State of Idaho.

Shipment: Sec. 21. It shall be unlawful for any railway, express company, stage line or other public carrier, or any of their agents or employees to receive or have in their possession for transportation any of the animals, birds, or fish, or any part or parts of any animals birds or fish protected by the provisions of this Act or other laws of this State, or to transport the same after the passage of this Act. Except, that nothing in this Act shall prevent shipping or transporting in any manner, mounted heads, or stuffed birds or animals to any point within the State; *Provided*, That such birds or animals were not killed in violation of this Act or other laws of the State, or that such heads or horns were not taken from animals taken or killed in violation of this Act or other laws of this State.

Penalties: Sec. 26. Any person or persons, agent or employee of any association or corporation violating any of the provisions of section 19 and 21 of this Act, shall upon conviction thereof be fined in any sum not less than twenty-five nor more than seventy-five dollars, together with costs of suit.

Approved, March 13, 1899.

ILLINOIS.

Laws of 1899, pp. 224-227.

Sale, Shipment: Sec. 2. It shall be unlawful for any person to buy, sell or have in possession any of the animals, wild fowl or birds mentioned in section 1 of this act [deer, wild turkey, pinnated grouse, ruffed grouse, prairie chicken, pheasant or partridge, quail, woodcock, dove, squirrel, snipe, plover, wild goose, duck, brant, or other waterfowl], at any time when the killing, trapping, netting and ensnaring of such animals, wild fowl or birds shall be unlawful which shall have been killed, entrapped, netted or ensnared contrary to the provisions of this act. And it shall further be unlawful for any person or persons at any time to sell or expose for sale, or to have in his or their possession for the purpose of selling, any quail, pinnated grouse or prairie chicken, ruffled grouse or pheasant, grey, red, fox or black squirrel or wild turkey that shall have been caught, ensnared, trapped or killed within the limits of this State. And it shall further be unlawful for any person, corporation or carrier to receive for transportation, to transport, carry or convey any of the aforesaid quail, pinnated grouse or prairie chicken, ruffled grouse or pheasant, squirrel, or wild turkey that shall have been caught, ensnared, trapped or killed within the limits of this State, knowing the same to have been sold, or to transport, carry or convey the same to any place where it is to be sold or offered for sale, or to any place outside of this State for any purpose, except such person have a license from this State so to do. And any person guilty of violating any of the provisions of this section shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be fined not less than twenty-five dollars nor more than one hundred dollars for each and every offense, and shall stand committed to the county jail not exceeding ten days until such fines and costs are paid: *Provided*, that the selling, exposing for sale, having in possession for sale, transporting or carrying and conveying, contrary to the provisions of this section, of each and every animal or bird forbidden herein, shall be deemed a separate offense.

Game birds defined: Sec. 3. * * * For the purposes of this act the following only shall be considered game birds: The An[a]tidæ, commonly known as swans, geese, brant and river and sea ducks; the Rallidæ, commonly known as rails, coots, mud-hens and gallinules; the Linicolæ [Limicolæ], commonly known as shore birds, plover, surf birds, snipe, wood-cock, sand-pipers, tatlers and curlews; the Gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges, quails, and mourning doves.[1]

Sale seasons: Sec. 6. No person or persons shall sell, or expose for sale, or have in his or their possession for the purpose of selling or exposing for sale, any of the animals, wild fowls or birds mentioned in section one (1) of this act after the expiration of five (5) days next succeeding the first day of the period in which it shall be unlawful to kill, entrap or ensnare such animals, wild fowls or birds; nor shall any of such animals, wild fowls or birds be sold or offered for sale during the first two days of the open season. Any person so offending shall, on conviction, be fined and dealt with as specified in section one (1) of this act [penalty, a fine of $15 to $50 and costs of suit, or imprisonment not exceeding 10 days, for each offense; but the killing of each bird or animal shall be deemed a separate offense], and selling or exposing for sale, or having the same in possession for the purpose of selling or exposing for sale, any of the animals or birds mentioned in this section, after the expiration of the time mentioned in this section, shall be *prima facie* evidence of the violation of this act: *Provided*, that the provisions of this act shall not apply to the killing of birds by or for the use of taxidermists for preservation either in public or private collection, if so preserved: *Provided further*, that nothing contained in this section shall be construed as modifying or being in conflict with section two (2) of this act, or authorizing or legalizing the sale or exposing for sale, transportation or receiving for transportation, any of the animals, birds or game as therein prohibited: *And provided, also*, that inhabitants of villages and cities may receive game from other States, and expose and sell the same on the market in said villages and cities between the first day of October and the first day of February of the following year.

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[1] Mourning doves properly belong to the Columbæ, not to the Gallinæ.

Game in transit: Sec. 7. The provisions of this act shall not be construed as applicable to any express company or common carrier, into whose possession any of the animals, wild fowl or birds herein mentioned shall come in the regular course of their business for transportation whilst they are in transit through this State from any place without this State where the killing and transportation of said animals, wild fowl or birds shall be lawful. But notwithstanding this provision, the having or being in possession of any such animals, wild fowl or birds as are mentioned in section one (1) upon any of the days upon which the killing, entrapping, ensnaring, netting, buying, selling, or having in possession any such animals, wild fowls or birds, shall be unlawful by the provisions of this act, shall be deemed and taken as *prima facie* evidence that the same was ensnared, trapped, netted or killed in violation of this act.

Property of State: Sec. 11. The ownership of and title to all wild game and birds in the State of Illinois is hereby declared to be in the State, and no wild game or birds shall be taken or killed in any manner at any time, except the person so taking or killing shall consent that the title to said game shall be and remain in the State of Illinois for the purpose of regulating the use and disposition of the game after such taking or killing. The taking or killing of wild game or birds at any time or in any manner or by any person shall be deemed a consent of said person that the title to such game or birds shall be and remain in the State for said purpose of regulating the use and disposition of the same.

Approved April 24, 1899.

INDIANA.

Thornton's Revised Statutes, 1897, p. 361.

Game birds defined: Sec. 2244. For the purpose of this Act the following only shall be considered game birds: The Anatidæ, commonly called swans, geese, brant, and river and sea ducks; the Rallidæ, commonly known as rails, coots, mud-hens, and gallinules; the Limicolæ, commonly known as shore birds, plovers, surf birds, snipe, woodcock, and sandpipers, tattlers, and curlews; the Gallinæ, commonly known as wild turkeys, grouse, prairie chickens, quail, and pheasants, * * *

Session Laws of 1901, Chap. CCIII, pp. 442–445.

Sale: Sec. 2. Whoever sells, or offers for sale, directly or indirectly, at any time, any quail, shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be fined ten (10) dollars for each quail sold or offered for sale, to which may be added imprisonment in the county jail for a period not to exceed ten days.

Export: Sec. 3. It shall be unlawful for any railroad company, express company, or other common carrier, or other person or persons to transport, take or carry, or receive for the purpose of transporting, taking or carrying beyond the limits of this State, any wild deer, buck, doe or fawn, any quail (except as provided in Section 13 of this act), ruffed grouse, pinnated grouse, prairie chicken, woodcock, wild turkey, any ringneck pheasant, any English pheasant, Mongolian pheasant, green Japanese pheasant, copper pheasant, silver pheasant, golden pheasant, or pheasant of any kind or species. Any railroad company, express company or other common carrier, or other person or persons violating any of the provisions of this section shall be deemed guilty of a misdemeanor and, upon conviction, shall be fined one hundred dollars for each such wild deer, buck, doe or fawn transported, taken or carried or received for the purpose of transportation, taking or carrying beyond the limits of this State; fifty (50) dollars for each ringneck pheasant, English pheasant, Mongolian pheasant, green Japanese pheasant, copper pheasant, silver pheasant, golden pheasant, or pheasant of any species or kind, or wild turkey so transported, taken or carried beyond the limits of this State, and ten (10) dollars for each quail, ruffed grouse, pinnated grouse, prairie chicken or woodcock transported, taken or carried or received for the purpose of transporting, taking or carrying beyond the limits of this State.

Shipment under license: Sec. 13. It shall be unlawful for any person who is a nonresident of the State of Indiana to hunt, anywhere within the State of Indiana, any of the wild animals, fowls or birds that are protected during any part of the year without procuring a license to do so, and then only during the respective periods of the year when it shall be lawful to do so. * * * Any licensee under the provisions of this section is hereby authorized to take from the State of Indiana twenty-four birds of all kinds, killed by himself, which shall be carried openly for inspection together with his or her license. Any person found guilty of violating any of the provisions of this section shall be fined not less than twenty-five (25) dollars and not more than one hundred (100) dollars, to which may be added imprisonment in the county jail for any period not to exceed thirty days.

Approved March 11, 1901.

INDIAN TERRITORY.[1]

Laws of the Chickasaw Nation.[2] Act of September 23, 1896.

Sale, Export: Sec. 2. * * * That no person shall kill, ensnare, net or trap any quail, prairie chicken, wild turkey, or any deer, antelope, or fawn, or other game, or fish, within the limits of the Chickasaw Nation to sell, or export to any State or Territory; and any person who shall export or ship any game killed or taken in the Chickasaw Nation out of said Nation or Territory, shall be punished as hereinafter provided for in this act.

Trapping: Sec. 3. * * * That no person shall ensnare, net or trap any quail, prairie chicken, wild turkey, deer, antelope, fawn, fish or other game used for food within this nation, or have in possession any game named in the foregoing section for any purpose or any pretense whatever, except for food, and then when actually necessary for immediate use; and the reasonable necessities of the person killing the same. Any person violating the provisions of this section shall be punished as hereinafter provided for in this act.

Penalties: Sec. 4. * * * That any person or persons found guilty of violating the provisions of this act, as specified in sections two and three, shall upon conviction thereof by the District Court of the Chickasaw Nation, be fined in any sum not less than twenty-five dollars, nor more than one hundred dollars, and be imprisoned in the National Jail not less than ten days nor more than one hundred days at the discretion of the Court trying the case for the first offense; and upon subsequent conviction for violating the provisions of this act, shall be both fined and imprisoned to the full extent provided for in this act.

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[1] For Federal law covering the whole Territory see p. 76.

[2] While the act of June 28, 1898, commonly known as the Curtis Act, abolishes the tribal governments in the Indian Territory, an exception is made in Section 29 continuing those of the Chickasaw and Choctaw Nations in force until March 4, 1906. (30 Stat. L., 512.)

Approved September 23, 1896

IOWA.

Annotated Code, 1897, Title XII, chap. 15, pp. 887–888.

Killing for traffic: Sec. 2552. No person shall at any time, or at any place within this State, trap, shoot or kill for traffic any pinnated grouse or prairie chicken, woodcock, quail, ruffed grouse or pheasant; nor shall any one person shoot or kill during any one day more than twenty-five of either kind of said named birds; nor shall any one person firm or corporation have more than twenty-five of either kind of said named birds in his or their possession at any one time, unless lawfully received for transportation; or catch or take or attempt to catch or take, with any trap, snare or net any of the birds or animals named in the preceding section; or in any manner wilfully destroy the eggs or nests of any of the birds named in this and the preceding section. [18 G. A., ch. 193, §2; 17 G. A., ch. 156, §3.]

Sale seasons: Sec. 2554. It shall be unlawful for any person, company or corporation to buy or sell, or have in possession, any of the birds or animals named in this chapter, during the period when the killing of such birds or animals is prohibited, except during the first five days of such prohibited period; and the possession by any person company or corporation of any such birds or animals during such prohibited period, except during the first five days thereof, shall be presumptive evidence of a violation of the provisions of this chapter relating to game. [17 G. A., ch. 156, §5.]

Shipment: Sec. 2555. No person, company or corporation shall at any time ship, take or carry out of this State any of the birds or animals named in this chapter; but it shall be lawful for any person to ship to any person within this State any game birds named, not to exceed one dozen in any one day, during the period when the killing of such birds is not prohibited; but he shall first make an affidavit before some person authorized to administer oaths that said birds have not been unlawfully killed, bought, sold or had in possession, are not being shipped for sale or profit, giving the name and post-office address of the person to whom shipped, and the number of birds to be so shipped. * * * [17 G. A., ch. 156, §6.]

Penalties: Sec. 2556. If any person use any device, kill, trap, ensnare, buy, sell, ship, or have in his possession, or ship, take or carry out of the State, contrary to the provisions of this chapter, any of the birds or animals named or referred to herein, or shall wilfully destroy any eggs or nests of the birds named or referred to in the preceding sections, he shall be punished by a fine of ten dollars for each bird * * * so killed, trapped, ensnared, bought, sold, shipped, had in possession, destroyed, or shipped, taken or carried out of the State, and shall stand committed to the county jail for thirty days unless such fine and costs of prosecuting are sooner paid. [17 G. A., ch. 156, §7.]

Receiving for shipment: Sec. 2557. If any railway or express company or other common carrier, or any of their agents or servants, receive any of the fish, birds or animals mentioned or referred to in this chapter for transportation or other purpose, during the period hereinbefore limited and prohibited, or at any other time except in the manner provided in this chapter, he or it shall be punished by a fine of not less than one hundred nor more than three hundred dollars, or by imprisonment in the county jail for thirty days, or by both such fine and imprisonment.

KANSAS.

Session Laws of 1897, chap. 135, pp. 294–295.

Sale: Sec. 6. It shall be unlawful for any person or persons, company or corporation, at any time, to buy, sell, barter, ship or offer for sale, barter or shipment, within the State of Kansas, any bird or birds named in section one of this Act. [Partridge, pinnated grouse or prairie chicken, grouse, quail, pheasant, oriole, meadowlark, robin, thrush, redbird, mockingbird, blue jay, turtledove, yellowhammer, or bluebird.] The having in possession by any person, company or corporation of any bird or birds named in section one of this act, except by a person who has lawfully killed the same, shall be deemed *prima facie* evidence of a violation of this act.

Shipment: Sec. 7. It shall be unlawful for any railroad, express or transportation company or corporation, or any agent, employee or manager of such company to accept, within the State of Kansas, for shipment or transfer, any of the birds mentioned in section one of this act. The having in possession of any of the birds mentioned in the first section of this act by any such railroad, express or transportation company or corporation, or agent or employee or manager thereof, shall be deemed *prima facie* evidence of a violation of this act.

Penalties: Sec. 8. Any person, or the manager, agent or employee of any company or corporation found guilty of a violation of any of the provisions of this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, before any court of competent jurisdiction shall be fined in a sum not less than five dollars nor more than one hundred dollars, for each and every offense, and costs, together with an attorney's fee of ten dollars, and shall be committed until such fine, costs and attorney's fee shall be paid.

Approved, March 13, 1897.

LOUISIANA.

[No general prohibitions against transportation or sale.]

MAINE.

Public Laws of 1899, chap. 42, pp. 35–44.

Introduction: Sec. 9. (as amended by Public Laws of 1901, chap. 222, p. 232) * * * Whoever introduces wild birds or wild animals of any kind or species, into the state except upon written permission of the commissioners of inland fisheries and game, shall forfeit not less than fifty dollars nor more than five hundred dollars.

Birds—Sale, Shipment: Sec. 11. (As amended by Public Laws of 1901, chap. 258, p. 281.) * * * Nor shall any person, at any time, kill or have in possession any ruffed grouse, commonly called partridge, or woodcock, except for his own consumption within this state, except as hereinafter provided, under a penalty of five dollars for each bird so unlawfully killed or had in possession; nor shall any person at any time sell, or offer for sale, any ruffed grouse, commonly called partridge, or woodcock, within this state, under the same penalty; nor shall any person or corporation carry or transport from place to place any of the birds mentioned in this section [wood duck, dusky or black duck, teal, gray duck, ruffed grouse or partridge, woodcock, quail, plover, snipe, and sandpipers, capercailzie or cock of the woods, black game and pheasant], in close season, nor in open season unless open to view, tagged, and plainly labeled with the owner's name and residence and accompanied by him, unless tagged in accordance with section twenty-six of this chapter under the same penalty [$5 for each bird]. Any person, not the actual owner of such bird or birds, who, to aid another in such transportation, falsely represents himself to be the owner thereof, shall be liable to the same penalty; nor shall any person or corporation carry or transport at any one time more than fifteen of any one variety of the birds above named as the property of one person under the same penalty. * * *

Game birds defined: SEC. 12. [as amended by Public Laws of 1901, chap. 142, p. 159] * * * For the purposes of this act, the following only shall be considered game birds: the anatidæ, commonly known as swans, geese, brant, and river and sea ducks; the rallidæ, commonly known as rails, coots, mud-hens and gallinules; the limicolæ, commonly known as shore birds, plovers, surf birds, snipe, woodcock, sandpipers, tatlers and curlews; the gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges and quails. * * *

Shipment—Moose, deer: SEC. 23. No person or corporation shall carry or transport from place to place any moose or deer, or part thereof, in close time, nor in open time unless open to view, tagged and plainly labeled with the name and residence of the owner thereof, and accompanied by him, under a penalty of forty dollars and costs of prosecution for each moose or deer so transported or carried; and any person not the actual owner of such game or parts thereof, who, to aid another in such transportation, falsely represents himself to be the owner thereof, shall be liable to the penalties aforesaid; and it shall be prima facie evidence that said game, that is being transported or carried in violation of this section, was illegally killed; but nothing herein shall apply to the transportation of moose or deer by any person or corporation, when such game is lawfully tagged in accordance with the provisions of section twenty-six of this chapter. Whoever lawfully kills a bull moose shall, while the same or any part thereof, is being transported, preserve and transport it with the evidence on the moose of the sex of the same. Whoever fails to comply with the provisions of this section shall forfeit to the State the moose or part thereof being transported, and pay a fine of three hundred dollars and costs of prosecution.

Seizure, Return: SEC. 24. All birds, fish, and game hunted, caught, killed, destroyed, bought, carried, transported or found in possession of any person or corporation, in violation of the provisions of this chapter and amendments thereto, shall be liable to seizure; and in case of conviction for such violation, such game shall be forfeited to the State, to be sold for consumption in this State only. Any person whose game or fish has been seized for violation of any game or fish law, shall have it returned to him on giving to the officer a bond with sufficient sureties, residents of the State, in double the amount of the fine for such violation, on condition that, if convicted of such violation, he will, within thirty days thereafter, pay such fine and costs. If he neglects or refuses to give such bond and takes the game or fish so seized, he shall have no action against the officer for such seizure, or for the loss of the game or fish seized.

Export: SEC. 25. No resident of this State shall sell or give away any moose or deer or part thereof, or any game birds, to be transported or carried beyond the limits of this State, under a penalty of one hundred dollars for each and every moose, deer or part thereof, and one dollar for every game bird so sold or given away; and any person who shall buy any of the above-named animals or birds or parts thereof, to so transport them, or who shall transport them after buying the same or receiving the same as a gift, shall be subject to the same penalty.

Tags: SEC. 26. Any person who has lawfully killed a moose or a deer, * * * or one pair of game birds, may send the same to his home or to any hospital in the State, without accompanying the same by purchasing of the duly constituted agent therefor a tag, paying for a moose five dollars, for a deer two dollars, * * * and fifty cents for a pair of game birds. The commissioners of inland fisheries and game may appoint agents in convenient localities who may sell these tags, under such rules and regulations as the commissioners may adopt. * * *

Deer, sale under license: Sec. 27. Any marketman or provision dealer, having an established place of business in this State, may purchase and have in his possession at his said place of business not more than three deer, lawfully killed or destroyed, or any part thereof, at one time, and may sell the same at retail to his local customers, provided, however, that said marketman or provision dealer, shall have procured a license of the commissioners of inland fisheries and game to carry on said business of buying and selling deer as aforesaid; and provided further, that said marketmen shall record in a book kept for that purpose, and open to the inspection of inland fish and game wardens and the commissioners of inland fisheries and game, the name and residence of each person of whom he purchases any inland fish or game and the date of such purchase; and if any marketman or provision dealer shall violate the provisions of this section, he shall be fined five hundred dollars for each offense and be prohibited for five years thereafter from the benefits of this section. All marketmen or provision dealers licensed as aforesaid shall pay to the commissioners, in cities and towns of over three thousand inhabitants, five dollars annually, and three dollars in all other places; or instead of this fee, the commissioners may, at their discretion, issue licenses authorizing the retailing of deer as above specified, on payment of fifty cents for each deer retailed; said marketmen and provision dealers holding these licenses shall annually, on December fifteenth, make, sign, and send to the commissioners, under oath, a statement setting forth in detail the number of deer by them bought, and of whom bought, and the date of each purchase, during the time covered by their licenses; and whoever fails to make the report required in this section shall be subject to a penalty of one hundred dollars and costs.

Deer-skin license: Sec. 28. The commissioners may annually issue licenses to suitable persons to buy and sell, or tan, deer skins lawfully taken. Such persons shall keep a record of all deer skins purchased, of whom purchased, and the date of purchase, and shall report annually to the commissioners. The fee for such license shall be five dollars, to be paid to the commissioners and by them to the State treasurer; and whoever, licensed as aforesaid, unreasonably and willfully refuses to make such report, shall be punished by a fine of one hundred dollars and costs.

Game defined: Sec. 50. * * * The term 'game animals' shall be construed to mean moose, caribou and deer.

Approved, March 8, 1899.

MARYLAND.

The general State game law, Acts of 1898, chap. 206, only contains provisions against sale of game in close seasons. The following abstracts of local laws are taken from the compilation of the game and fish laws prepared by the Maryland Game and Fish Protective Association, and are arranged alphabetically by counties.

Anne Arundel. [Unlawful to sell any partridge, quail, woodcock or pheasant taken in Anne Arundel County, or to carry the same out of the county alive or dead. Penalty, $5 for each bird, or 10 days; one-half of the fine to informer, one-half to county schools. Acts 1900, chap. 151.]

Caroline. [Unlawful to ship or attempt to ship out of this county at any season, any partridges, quail, woodcock, or rabbits shot or trapped in said county. Penalty, $5 for each bird, etc., so shipped. Possession by any express or transportation company of any of said game is *prima facie* evidence of violation. Public Local Laws, 1888, Art. 6, Secs. 30, 31.]

Frederick. [Unlawful to sell, barter or trade, (or to attempt the same) any pheasant, partridge, squirrels or woodcock that have been trapped or shot in Frederick county. Penalty, $10 for each bird, etc.; one-half to informer. Public Local Laws, 1888, Art. 11, Secs. 45, 48, 53.

[Unlawful to ship or attempt to ship beyond the limits of Frederick county or to sell for the purpose of shipping, or to send or carry beyond said limits for the purpose of sale, etc., any pheasants, partridges, squirrels or woodcock shot, snared, etc., in said county. Penalty, $50 for each violation; one-half to informer. Ibid., Secs. 47, 48, 53.

[Possession of any pheasant, partridge, squirrel or woodcock in Frederick county, *prima facie* evidence that the same was shot, trapped, etc., in said county. Ibid., Sec. 49.

[Transportation or offer to transport any pheasants, partridges, squirrels or woodcock is *prima facie* evidence that the same were transported or shipped or offered for transportation or shipment for the purpose of sale. Ibid., Sec. 50.

[Carrying of pheasants, partridges, squirrels, or woodcock from door to door is *prima facie* evidence that the same were offered for sale. Ibid., Sec. 51.]

Kent. [Unlawful for any person or corporation in this county to ship or transport for sale beyond said county (or to attempt the same) any bird, rabbit, or squirrel killed or taken in said county without first obtaining a license. Penalty, $30 for each offense; one-half to informer. Possession of any of said game by an express or transportation company at any time is *prima facie* evidence of violation. Acts 1894, chap. 501, Secs. 38, 39.]

Montgomery. [Unlawful to sell for the purpose of being carried out of the county, or to carry out of the same, for the purpose of sale, any partridge, pheasant, or wild turkey. Penalty, $10 for each violation; one-half to informer. Public Local Laws, 1888, Art. 16, Secs. 56, 57.]

Queen Anne. [Unlawful to ship, or attempt to ship for sale, out of said county, at any season, any partridge, rabbit, or woodcock shot or trapped in this county, without obtaining license. Penalty, $5 for each bird so shipped or sold, payable to school fund. Possession by any transportation company *prima facie* evidence of violation. Public Local Laws, 1888, Art. 18, Secs. 34, 36.]

Somerset. [Unlawful to send or take any of the following game out of the county: Rabbit, squirrel, muskrat, partridge, pheasant, dove, woodcock, wild duck, wild goose. Penalty, $5 to $25 for each and every bird or animal. Acts 1900, chap. 203.]

Washington. [Unlawful to sell, or attempt to sell, at any time, pheasants, partridges, wild turkeys, deer, squirrels, or rabbits killed or trapped in Washington County, or to ship said game elsewhere to sell the same. Penalty, $10 to $20; one-half to informer. Public Local Laws, 1888, Art. 22, Secs. 32, 33, 34.]

Wicomico and Worcester. [Unlawful for any person, corporation, or company at any time to kill or expose for sale, transport, or have in possession any partridge or quail, after the same has been killed, for any purpose except for consumption as food, within Wicomico or Worcester counties; nor kill, expose for sale, or have in possession any of the above-named game with the intention of sending or transporting or having the same sent or transported beyond the limits of said counties.

But this is not to prevent barter or sale of such game for home consumption only, by residents of said counties within the limits of said counties. Penalty, $5 to $25 for each offense, all of which is payable to informer. Public Local Laws, 1888, Art. 23, Secs. 7 and 8.]

MASSACHUSETTS.

Acts and Resolves of 1884, chap. 308.

Propagation: Sec. 2. Game artificially propagated and maintained upon lands, posted as above [with conspicuous notices that shooting or trapping is prohibited], shall be the exclusive property of the person propagating and maintaining the same, but such person shall not sell such game for food at seasons when its capture is prohibited by law.

Penalty: Sec. 3. Whoever offends against any of the provisions of this act shall be punished by a fine not exceeding twenty dollars.

Acts and Resolves of 1886, chap. 276.

Export: Sec. 10. Whoever takes, carries, sends, or transports any of the birds or animals protected herein, out of this Commonwealth, the said birds or animals having been illegally taken or killed within this State, shall be punished by fine of twenty dollars.

Approved, June 10, 1886.

Acts and Resolves of 1890, chap. 249, p. 156.

Export: Sec. 2. Whoever at any time takes or sends or causes to be taken or transported beyond the limits of the Commonwealth any woodcock, quail or ruffed grouse taken or killed within the Commonwealth, or has in possession any such bird or birds with intent to take or cause the same to be taken out of the Commonwealth, shall be punished by a fine of ten dollars for every bird so had in possession or taken or caused to be taken or sent beyond the limits of the Commonwealth as aforesaid.

Approved, April 30, 1890.

Acts and Resolves of 1900, chap. 379, pp. 320–321.

Sale: Sec. 2. For a period of three years after the passage of this act it shall also be unlawful to buy, sell, offer for sale, or have in possession for sale, any woodcock, or ruffed grouse, commonly called partridge, whenever or wherever the said birds may have been taken or killed.

Sec. 3. It shall be unlawful to take or kill or have in possession, or buy, sell or offer for sale, a quail, between the first day of December and the first day of October following, whenever or wherever such bird may have been taken or killed: *Provided, however*, that any person, firm or corporation dealing in game or engaged in the cold storage business may buy, sell or have in possession, and any person may buy from such person, firm or corporation, and have in possession if so bought, quail from the first day of December to the first day of May, if such quail were not taken or killed in this Commonwealth contrary to the provisions of this act; and any person, firm or corporation dealing in game or engaged in the cold storage business may have quail in possession on cold storage at any season, if such quail were not taken or killed in this Commonwealth contrary to the provisions of this act.

Sec. 4. It shall be unlawful to take or kill a pinnated grouse at any time, or a wood or summer duck, black duck or teal, between the first day of March and the first day of September, or any other of the so-called duck species, between the twentieth day of May and the first day of September, or to buy, sell or have in possession any of the birds named in this section during the time within which the taking or killing thereof is prohibited, whenever or wherever such birds may have been taken or killed: *Provided, however,* that any person, firm or corporation dealing in game or engaged in the cold storage business may buy, sell or have in possession, and any person may buy from such person, firm or corporation, and have in possession if so bought, pinnated grouse, wild pigeons and any of the so-called shore, marsh or beach birds, or any of the so-called duck species, at any season, if such birds were not taken or killed in this Commonwealth contrary to the provisions of this act.

Penalty: Sec. 5. Whoever takes or kills, or buys or sells or offers for sale, or has in possession, or has in possession for sale, any bird contrary to the provisions of this act, shall be punished by a fine of twenty dollars for every bird so taken or killed, or bought or sold or offered for sale, or had in possession, or had in possession for sale.

Approved, June 13, 1900.

Acts and Resolves of 1901, chap. 102.

Sale: Whoever kills a gray squirrel, hare or rabbit, between the first day of March and the first day of October, or within said time buys, sells or offers for sale any of said animals, shall be punished by a fine of ten dollars: *Provided, however*, that any person, firm or corporation, dealing in game or engaged in the cold storage business may buy, sell or have in possession, and any person may buy from such person, firm or corporation, and have in possession if so bought, Colorado jack rabbits, Nova Scotia white or eastern white rabbits at any season, if not taken or killed in this Commonwealth contrary to the provisions of this act.

MICHIGAN.

Public Acts of 1893, No. 196, pp. 312–314.

Property of State: Sec. 1. That no person shall at any time or in any manner acquire any property in, or subject to his dominion or control, any of the birds, game or fish, the killing, taking, or having in possession of which is at any time or at all times prohibited by any of the laws of this State, that they shall always and under all circumstances and conditions be and remain the sole property of the State. * * * When their killing is not prohibited by law, the same may be used at the time, in the manner, and for the purposes expressly authorized by law, but not otherwise.

Export: Sec. 2. No person, company or corporation shall at any time catch, take or kill, or have in possession of or under control, any of the birds, game or fish of this State, the killing of which is at any time or at all times prohibited by law, with intent to ship the same beyond the limits of this State, or with intent to allow or aid in their shipment out of this State, or shall ship or intentionally allow or aid in their shipment out of this State: * * *

Possession: Sec. 3. No person shall at any time have in possession or under control any bird, game or fish caught, taken or killed outside of this State, which was caught, taken or killed at any time, in a manner or for a purpose forbidden by the laws of the State, Territory or country where the same was caught, taken or killed, or which was shipped out of said State, Territory or country in violation of the laws thereof.

Sec. 4. The possession or having under control of any kind of bird, game or fish, the killing of which is at any time or at all times prohibited by the laws of this State, shall be *prima facie* evidence that it was killed in this State, to disprove which it shall be necessary to show by the testimony of the party who actually caught, took or killed the same that it was killed outside of this State. Whenever it shall appear that any bird, game or fish of a kind the killing of which is at any time or at all times prohibited by the laws of this State, was caught, taken or killed outside of this State, it shall be *prima facie* evidence that such bird, game or fish was caught, taken or killed at a time, in a manner and for a purpose prohibited by the laws of the State, Territory or country where it was caught, taken or killed, and was shipped out of said State, Territory or country in violation of the laws thereof. * * *

Propagation: Sec. 5. No person, company or corporation shall sell, or attempt to sell, or expose for sale, or have in possession or under control, for the purpose of selling or exposing for sale, any kind of bird, game or fish at any time when the taking, catching or killing of such kind of birds, game or fish is prohibited by the laws of this State: *Provided, however*, That nothing in this act shall prevent the taking or catching alive of birds, game or fish for domestication, propagation or breeding purposes.

Penalties: Sec. 6. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars and not more than fifty dollars, and the costs of prosecution, and in default of payment thereof shall be confined in the county jail until such fine and costs shall be paid; but such confinement shall not exceed thirty days.

Approved, June 1, 1893.

Public Acts of 1901, H. B. No. 104.

Sale: Sec. 4. No person shall by himself, his clerk, servant or agent, expose or keep for sale, or directly or indirectly, upon any pretense or any device, sell or barter, or in consideration of the purchase of any other property, give to any other person any of the protected animals or birds mentioned in this act within the State of Michigan. [These animals and birds are deer, elk, moose, caribou, squirrel—fox, black, or gray—mourning dove, Antwerp or homing pigeon, pinnated grouse or prairie chicken, Mongolian and English pheasants, wild turkey, wild pigeon, ruffed grouse (partridge), colin (quail), spruce hen, woodcock, wild duck, wild goose, brant, snipe, plover, any kind of wild water fowl.]

Game birds defined: Sec. 15. The term "game bird" used in this act shall be considered to mean all birds named or referred to [see list in sec. 4] except those referred to in section 14 [insectivorous species].

Possession: Sec. 17. It shall be lawful for any person to have at any time in possession the dead body or carcass, or skin, or any portion thereof, of any animal or bird mentioned or referred to in this act for scientific purposes, or as specimens, or for his own consumption: *Provided*, That any person engaged in rearing any of the animals mentioned in this act, within an enclosure, may kill for his own use and consumption at any time, any of said animals, and may sell and transport alive any of said animals when accompanied by a permit from the State Fish and Game Warden; and it shall be the duty of the said State Fish and Game Warden to issue such permits upon application, when satisfied that such animals were so reared within an enclosure.

Permits: Sec. 19. The State Game and Fish Warden is hereby given authority to issue permits for the transportation and sale of deer skins at any season of the year when satisfied such hides were killed at a lawful time and in a lawful manner; each hide so transported or sold shall have attached to it the original license tag while being so transported or sold. All game or game birds transported under cover, shall be plainly marked on the outside of package such game or game birds are shipped in, with the name of the consignor and the consignee, the initial point of billing and the destination, together with an itemized statement of the quantity of game or game birds contained therein.

Offense, Evidence: Sec. 20. The injuring, destruction or killing or capturing of each animal or bird injured, captured, killed or destroyed contrary to the provisions of this act shall be a separate offense, and the person so offending shall be liable to the penalties and punishments herein provided for each such offense. In all prosecutions for a violation of any of the provisions of this act, proof of the possession of the dead body or carcass, or skin, or any portion thereof of any animal or bird mentioned or referred to in this act, at a time when the killing thereof is unlawful, shall be prima facie evidence that such animal or bird was killed at a time when the killing thereof was prohibited by law. All person violating any of the provisions of this act, whether as principal, agent, servant or employe, shall be equally liable as principal, and any person or principal shall be liable for any violation of any of the provisions of this act, by his agent, servant or employe, done under his direction or knowledge.

Permits: Sec. 21. The State Game and Fish Warden is hereby given authority to issue permits to any person to take, capture or kill any animal or bird mentioned in this act, at any time when satisfied such person desires the same exclusively as specimens or for scientific or propagating purposes. Such permit shall be in writing and shall state the kind and number to be taken and the manner of taking, the name of the person to whom issued, and shall be signed by him and have attached the seal of his department; such permits shall not be transferable, nor shall it be lawful to sell or barter any of the birds or animals taken under such permit, and the holder of such permit shall be liable to the penalties provided in this act if he violates any of its provisions.

SEC. 22. The State Game and Fish Warden may issue permits to the trustees or custodian of any public park to transport out of this State any bird or animal held in such park, when satisfied that such transfer is for the purpose of exchange with other public parks outside of this State for other specimens for free exhibition in this State; such permits shall not be transferable and shall be in writing and issued under the seal of his department, and shall state the name and location of the public park, to whom issued, the kind and number of birds or animals to be so transferred, the name and location of the public park to whom transferred, and the kind and number of birds or animals for which exchange is made.

Penalties: SEC. 23. Any person or persons violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof, for the first offense, shall be punished by a fine of not less than ten dollars and not exceeding one hundred dollars, together with costs of prosecution, or by imprisonment in the county jail not exceeding ninety days, or by both such fine and imprisonment, in the discretion of the court; and for the second, or any subsequent offense, shall upon conviction be punished by a fine of not less than fifty dollars and not exceeding two hundred dollars, or by imprisonment in the county jail not exceeding one year, or by both such fine and imprisonment, in the discretion of the court, and in all cases when a fine and costs is imposed the court shall sentence the offender to be confined in the county jail until such fine and costs are paid, for any period not exceeding the maximum jail penalty provided for such offense.

Approved ——, 1901.

MINNESOTA.

General Laws of 1897, chap. 221, as amended by General Laws of 1901.

Property of State: SEC. 9. No person shall at any time or in any manner acquire any property in or subject to his dominion or control, any of the birds, animals or fish within this State of the kinds herein mentioned, but they shall always and under all circumstances be and remain the property of this State. By killing, catching or taking the same, however, in the manner and for the purposes herein authorized, and during the periods when their killing is not herein prohibited, the same may be used at the time, in the manner, and for the purposes herein expressly authorized, but not otherwise; and whenever any person kills, catches, takes, ships or has in his possession, or under control, any of the birds, animals or fish mentioned in this act at a time or in a manner prohibited by this act, such person shall thereby forfeit and lose all his right to the use and possession of such bird, animal or fish, and the State shall be entitled to the sole possession thereof.

Sale: SEC. 10 [as amended by Laws of 1901, chap. 35]. * * * It shall be unlawful and is prohibited to catch, take, kill, or have in possession or ship any turtle dove, snipe, prairie chicken or pinnated grouse, white-breasted or sharp-tailed grouse, between the first day of November and the first day of September following; or any quail, partridge, ruffled grouse or pheasant between the first day of December and the first day of October following; or woodcock, upland plover, between the thirty-first (31st) day of October and the fourth day of July following; or any Mongolian, English or Chinese pheasant any time prior to the first day of September, A. D. one thousand nine hundred and four (1904); or any wild duck of any variety, or any variety of wild goose, brant, or any variety of aquatic fowl whatever, between the first day of January and the first day of September following.

The sale, exposing for sale, having in possession with intent to sell, or the shipment to any person, either within or without the State, by common or private carrier, of any quail, ruffled or sharp-tailed grouse, prairie chicken or ruffled grouse, sometimes known as partridge or pheasant, wild duck of any variety, or any variety of wild goose, brant, or any variety of aquatic fowl whatever, is hereby prohibited and made unlawful. Except that when the birds mentioned in this section have been lawfully caught, taken and killed within the time herein allowed, they may be had in possession for ten (10) days after the time hereinbefore limited for use as herein specified, and not otherwise. Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine of not less than ten ($10) dollars, nor more than twenty-five ($25) dollars, and costs of prosecution, or by imprisonment in the county jail for not less than ten (10) days, nor more than thirty (30) days for each and every bird so caught, taken or killed, shipped or had in possession or under control.

Export: Sec. 13. No person shall at any time catch, take, kill, receive or have in possession or under control any of the birds in this act mentioned, caught, taken or killed in this State, with intent to ship the same beyond the limits of this State, or with intent to allow or aid in their shipment out of this State, or ship the same out of this State.

Whoever shall offend against the provisions of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten (10) dollars nor more than twenty-five (25) dollars and costs of prosecution, or by imprisonment in the county jail for not less than ten (10) days nor more than thirty (30) days for each and every bird so caught, taken, killed or had in possession or under control, or shipped or allowed or aided to be shipped.

Deer, Elk: Sec. 14 [as amended by Laws of 1901, chap. 229]. No person shall hunt, catch, take, kill, ship or have in possession, any elk, at any time, except that deer may be killed between November the 10th and November 30th of the same year, but no person shall kill more than three (3) deer in any one season; *provided*, that no buck, doe, deer or fawn shall be offered for sale or sold at any time.

And *provided further*, that when any deer has been lawfully killed, they may be had in possession for five (5) days after the time herein limited for killing the same, and be used in the manner herein allowed, but not otherwise. It shall be and is hereby made unlawful for any person to ship or cause to be conveyed by any public or private conveyance, at any time, any elk, moose, caribou or deer, or any part thereof, except the same is in the control of and accompanied by some person in charge thereof, other than an employe of a common carrier. *Provided*, *further*, that it shall be and it is hereby made unlawful for any person to ship or cause to be conveyed in any manner aforesaid any of such animals in excess of three (3) in number, during any one (1) year, from and after November 10th, and whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and upon conviction thereof shall be punished with a fine of not less than fifty (50) dollars, nor more than one hundred ($100) dollars and cost of prosecution, or by imprisonment in the county jail for not less than sixty (60) nor more than ninety (90) days for each and every deer, fawn or elk, or any part thereof, including the hide and horns, so caught, killed, taken, shipped or had in possession or under control. *Provided*, *further*, the shipment by express, by private or public carrier, to any person within the State, when the party accompanies the shipment on the same train or conveyance, shall not be deemed a violation of this section.

Moose, Caribou: Sec. 15. [as amended by Laws of 1901, chap. 229] No person shall hunt, catch, kill, ship or have in possession or under control at any time, any moose or caribou, except that male moose and male caribou may be killed between the 15th day of November and the 20th day of November, in the same year, but no person shall kill more than one (1) moose and one (1) caribou in any one season. And *provided further*, that when any male moose or male caribou have been lawfully killed, they may be had in possession for five (5) days after the time herein limited for killing the same, and be used in the manner herein allowed, but not otherwise. Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than one hundred ($100) dollars nor more than three hundred ($300) dollars and costs of prosecution, or by imprisonment in the county jail for not less than ninety (90) nor more than two hundred (200) days for each and every moose or caribou, or any part thereof, including the hide and horns, caught, taken, killed, shipped or had in possession or under control.

Export of big game: Sec. 18. No person shall at any time catch, take, kill or have in possession or under control any elk, deer, moose or caribou, or any part thereof, caught, taken or killed in this State, with intent to ship the same beyond the limits of this State, or with intent to allow or aid in their shipment out of this State, or shall ship or allow or aid in their shipment out of this State.

Whoever shall offend against any of this [the] provisions of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than fifty (50) dollars nor more than one hundred (100) dollars and costs of prosecution, or by imprisonment in the county jail for not less than sixty (60) days nor more than ninety (90) days, for each and every deer, moose, caribou or any part of the same so caught, taken or killed, or had in possession or under control, or so shipped, or allowed to be shipped, or aided to be shipped.

Possession: Sec. 19. Any person who is legally in possession of any of the birds or animals herein mentioned which have been caught, taken and killed at a time and in a manner permitted by the provisions of this act, and who is desirous of retaining possession of the same for his own use after the time hereinafter limited when they may be had in possession, and who shall, before the expiration of the five days hereinbefore limited within which they may be had in possession, make application to the board of game and fish commissioners for leave to retain the same, which application shall be in writing and signed and sworn to by the applicant, and shall state:

First—The name and residence of the person in possession of such birds or animals.

Second—The number, kinds and location of said birds or animals, which unless [number] shall not exceed one hundred birds, three deer, one moose and one caribou for each applicant.

Third—That if permitted to retain the same by said board the applicant will keep in possession of said birds and animals for his own use, and will not ship, sell or dispose of the same.

If said board is satisfied that said application is made in good faith, and said applicant will keep said birds or animals for his own use and not for sale, the said board shall cause tags or seals which cannot be duplicated by others, and which cannot be removed without destroying the same to be attached to each bird or animal, not exceeding one hundred birds, three deer, one moose, one caribou for each applicant. The person making such application shall, before said tags or seals are attached, pay to said board the reasonable expense of making and attaching such tags or seals.

After such tags or seals have been so attached as aforesaid by said board, and the person who made such application keeps possession of such birds or animals for his own use and does not ship, sell or dispose of the same, and such tags or seals remain upon said birds or animals, he may retain possession of such birds or animals until consumed.

Any person who shall ship, sell or dispose of any birds or animals which have been tagged or sealed as aforesaid shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than twenty-five (25) dollars nor more than fifty (50) dollars and costs of prosecution, or by imprisonment in the county jail for not less than thirty (30) days nor more than sixty days for each and every bird or animal so shipped or sold or disposed of.

Imported game: SEC. 32. No person shall at any time have in possession or under control in this State any bird, animal or fish caught, taken or killed outside of this State at a time when it is unlawful to have in possession or under control such birds, animals or fish when caught, taken or killed in this State.

Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten (10) dollars nor more than fifty (50) dollars and costs of prosecution, or by imprisonment in the county jail for not less than ten (10) days nor more than sixty (60) days for each and every such bird, animal or fish had in possession or under control.

Evidence: SEC. 33. The possession or having under control any bird, animal or fish of any kind, the killing of which is at any or all times herein prohibited, shall be *prima facie* evidence that it was the property of this State at the time it was caught, taken or killed, and that it was caught, taken and killed in this State. * * * Whenever it shall appear that any bird, animal or fish of any of the kinds the killing of which is at any or all times herein prohibited was caught, taken or killed outside of this State, it shall be *prima facie* evidence that at the time it was caught, taken or killed it was the property of the State, Territory or country in which it was caught, taken or killed, and that such bird, animal or fish was caught, taken or killed at a time, in a manner or for a purpose prohibited by the laws of the State, Territory or country where it was caught, taken or killed, and that it was shipped out of said State, Territory or country in violation of the law thereof. * * *

Notification: SEC. 34. It shall be the duty of every common carrier, its agents and all other persons, whenever any bird, animal or fish of any of the kinds the killing of which is at any or all times herein prohibited, is, in violation of law, offered for transportation or had in possession for such purpose, or is shipped, to at once notify the board of game and fish commissioners of this State, or one of the game wardens appointed by them, of the name and residence of the party making such shipment, the place from whence shipped and the name and residence of the party to whom shipped, and the kinds of birds, animals or fish so shipped.

Whoever shall offend against any of the provisions of this section shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than fifty (50) dollars nor more than one hundred dollars and costs of prosecution, or by imprisonment in the county jail for not less than sixty (60) days nor more than ninety (90) days.

Parts of game: SEC. 35. All sections of this act relating to the having in possession or under control of any bird, animal or fish, or to the shipment thereof out of or into this state, shall be construed to include any and all parts of the flesh or meat thereof.

Seizure: SEC. 36. Any bird, animal or fish mentioned in this act caught, killed, shipped or had in possession or under control contrary to any provision of this act is hereby declared to be and shall be contraband, and it shall be the duty of all members of the board of game and fish commissioners, all game wardens, sheriffs and their deputies, constables and police officers of this State, at any and all times, to seize and take possession of any and all birds, animals or fish which have been caught, taken or killed at a time, in a manner or for a purpose, or had in possession or under control, or have been shipped contrary to any provision of this act. * * *

Attempt to violate: SEC. 45. Any attempt to violate any of the provisions of any section of this act shall be deemed a violation of such provision and punishable in the same manner as a violation of such provision is punishable.

Domesticated game: Sec. 49. The provisions of this act shall not apply to domesticated birds or animals. * * *

Approved, April 23, 1897.

General Laws of 1899, chap. 161, pp. 167–168.

Breeding deer: Sec. 1. That all breeders or domesticators may after being and known to have been in the business of breeding and domesticating deer for a period of three (3) years have the right to sell, kill, dispose of and ship any deer, carcass, saddle or part of venison in the manner herein provided for; provided, that none but male deer shall be killed and sold as venison in all seasons of the year.

Sec. 2. That all breeders and domesticators shall be recorded by filing a sworn statement with the game and fish commissioner of this state, giving the place of residence, time of commencement of breeding and stating whether stock is domesticated or native.

Sec. 3. That all breeders or domesticators shall tag by number all deer, carcass, saddle or parts of venison before leaving the place of breeding; said tag shall be put on by seal; * * *

Sec. 4. That all breeders or domesticators shall make a report to the game and fish commissioner on the first day of January of each year, giving number of deer owned, sold or disposed of and the number of males and females on hand.

Approved April 11, 1899.

MISSISSIPPI.

Annotated Code 1892, chap. 54, p. 538.

Game defined: Sec. 2118. The term "game" includes all kinds of animals and birds found in the state of nature, and commonly so called. * * *

[No general prohibitions against transportation or sale.]

MISSOURI.

Laws of 1901, p. 131.

Sale: Sec. 2. * * * It is declared unlawful for any person to sell or offer to sell, buy or offer to buy any quail, pinnated grouse, prairie chicken, wild deer or wild turkey in this state for a period of five years from the passage of this act: Provided, this section shall not apply to game shipped into this state from any other state or territory. Any person found guilty of a violation of the provisions of this section shall be fined in a sum not less than twenty-five dollars nor more than one hundred dollars.

Shipment: Sec. 3. It shall be unlawful for any person to sell or attempt to sell for the purpose of shipping outside of the counties where killed, or to carry, transport or ship, or attempt to carry, transport or ship, from the county where killed to any other county or city in this state, or any point outside of this state any quail, pinnated grouse, prairie chicken, wild deer or wild turkey: Provided, this section shall not apply to game shipped into this state from any other state or territory.

Sec. 4. It shall be unlawful for any railroad or express company, or agent thereof, to receive for shipment, or convey from one county to another, any quail, pinnated grouse, prairie chicken, wild deer or wild turkey killed within this state: Provided, this section shall not apply to game shipped into this state from any other state or territory. Any person or employe, or agent of any corporation violating any of the provisions of sections 2 and 3 of this act shall be deemed guilty of a misdemeanor, and upon conviction, be punished by a fine of not less than twenty-five nor more than one hundred dollars.

Approved March 23, 1901.

MONTANA.

Laws of 1897, pp. 251, 253.

Trapping for sale: Sec. 8. That any person who shall willfully catch, trap or otherwise restrain, for the purpose of sale or domestication or any other purpose, any buffalo, elk, moose, or mountain sheep within the State, shall be deemed guilty of a misdemeanor and be fined not more than Five Hundred Dollars nor less than One Hundred Dollars, and shall be imprisoned in the county jail not exceeding six months or by both such fine and imprisonment for each offense committed in the discretion of the court.

Receiving for shipment: Sec. 17. Any person or persons, agent or employees, of any stage or express company, or railroad company, or association of persons, who shall receive for transportation or carriage, or shall sell or offer for sale, fish or game that have been taken or killed contrary to the provisions of this Act, knowing or having reason to believe that such fish or game were so illegally caught, taken or killed, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined in any sum not less than One Hundred Dollars, or more than Three Hundred Dollars for each lot or shipment of fish or game so transported or carried, or be imprisoned in the county jail for not less than ninety days, or both in the discretion of the court.

Sale: Sec. 19. Every person who shall sell or offer for sale, any of the birds or animals or any part thereof mentioned in sections 1, 2, 3, 4, 5 and 6 of this Act [deer, elk, moose, caribou, antelope, bison, buffalo, mountain sheep, Rocky Mountain goat, quail, partridge, grouse, prairie chicken, fool hen, sage hen, pheasant, Chinese pheasant, wild duck, wild goose, brant, swan], is punishable by a fine of not less than Twenty-five Dollars or more than Two Hundred and Fifty Dollars, or by imprisonment in the county jail for not less than thirty days, nor more than ninety days, or both such fine and imprisonment in the discretion of the court.

Approved, March 8, 1897.

NEBRASKA.

Laws of 1901, chap. —.

ARTICLE I.

Property of State: Sec. 9. All fish or game, song, insectivorous or other birds now or hereafter within this state not held by private ownership, legally acquired, and which for the purpose of this act shall include all the quadrupeds, birds and fish mentioned in this act, are hereby declared to be property of the state, and no right, title, interest or property therein can be acquired or transferred or possession thereof had or maintained except as herein expressly provided.

Definitions: Sec. 11. As used in this act, unless otherwise specifically restricted or enlarged, the words herein and hereof refer to the whole act; the words person, owner, proprietor, grantee, lessee, or licensee include a firm, association, corporation or municipality; the word commissioner means the state game and fish commissioner or deputy commissioners provided for herein; the word officer includes every person authorized to enforce this act; and whenever the possession, use, importation, transportation, storage, taxidermy, for millinery purposes, sale, offering or exposing for sale of fish or game, song, insectivorous or other birds is prohibited or restricted, the prohibition or restriction shall, where not specifically otherwise provided extend to and include every part of such fish or game, song, insectivorous or other bird, and a violation as to each individual animal or bird or part thereof shall be a separate offense, and two or more offenses may be charged in the same complaint, information or indictment, and proof as to a part of an animal shall be sufficient to sustain a charge as to the whole of it; and violations as to any number of animals or birds of the same kind may be charged in the same count and punished as a separate offense as to each animal.

Evidence: Sec. 12. The possession at any time of fish or game, song, insectivorous or other birds unaccompanied by a proper and valid license, certificate, permit or invoice, as herein provided, shall be prima facie evidence that such fish or game, song, insectivorous or other bird was unlawfully taken and is unlawfully held in possession and it shall be the duty of every person having the possession or control of fish or game, song, insectivorous or other birds to produce the proper license, certficate permit or invoice, when one is required by this act, on demand of any officer, and to permit the same to be inspected and copied by him.

ARTICLE II.

Prohibitions, sale: Sec. 1. No person shall at any time of the year, or in any manner, pursue, take, wound or kill any elk, deer, antelope or beaver, or any of the following wild birds, viz.; Turkey, prairie chicken, sage chicken, grouse, quail, pheasant, partridge, ptarmigan, duck, goose, brant, swan, crane, waterfowl, wild pigeon, dove, snipes, or curlew, or any song, insectivorous or other bird, or any trout, white fish grayling, sunfish, bass, catfish, wall-eyed pike, pickerel, croppi, or other food fish, ship or sell, offer or expose for sale or have the same in possession, except as permitted by this act.

Game for food only: Sec. 4. * * * * *

6. Except as otherwise provided by this act, the right given by this section to take or kill game and fish is limited to food purposes. * * *

Sale: Sec. 7. It shall be unlawful for any corporation, company, association, person or persons, or its, his or their officers, agents, servants or employes, to sell, expose for sale, or to have in its, his or their possession or control, any wild elk, deer or antelope, grouse, pheasant, prairie chicken, quail, wild turkey, wild goose, brant or any wild duck, or any of the birds, animals or fish protected by this act, except during the open season hereinbefore defined or otherwise provided, and the period of five days next succeeding the close of such season. Every corporation, company, association, its officers, agents, employes, and each of them, and any person or persons, his or their agents and employes, and each of them violating any of the provisions of this section, shall be deemed guilty of a misdemeanor, and on conviction be fined twenty-five dollars for each and every such animal so sold, exposed for sale or so had in its, his or their possession or control, and shall on conviction be fined five dollars for each and every such bird sold, exposed for sale, or so had in its, his or their possession or control.

Export: Sec. 8. * * * No transportation company or common carrier shall receive for transportation or shipment out of the state any birds, fowls or animals protected by the laws of the state, except when the same shall be in the personal possession of, or carried as baggage or express by the owners thereof, and such owners [sic] shall have in his possession at the time of such taking out of the state a non-resident license duly issued to him under the provisions of law, and the number and kind of birds and fish so carried out of the state should be endorsed on the license of [the] person entitled to take them out, and said persons [sic] shall accompany the said birds, fowls or animals on the same train or other conveyance of the common carrier beyond the borders of the state. Any person who shall violate any of the provisions of this section shall be punished by a fine of not less than fifty dollars nor more than one hundred dollars, or by imprisonment in the county jail not more than sixty days.

Shipment: Sec. 9. It is unlawful for any person a resident of this state to ship or take within or without this state any birds, fowls or animals protected by the laws of this state, except when accompanied by the same and in his possession on the same train, as provided for in this act. Any person who shall violate any of the provisions of this section shall be punished by a fine of five dollars for each bird so shipped or taken, or by imprisonment in the county jail not more than ninety days.

Marking packages: Sec. 10. It is hereby required that any and all packages containing fish or game shall be labeled in plain letters on the address side of the package, so as to disclose the fact that said package contains fish or game, and the amount of said fish or game so contained in said package. Any person who shall deliver to a common carrier for transportation any package or parcel containing fish or game, which said package or parcel shall not be so labeled as herein required, or who shall place upon said package or parcel a false statement as to the contents thereof, shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars, or by imprisonment in the county jail not more than thirty days.

Sec. 11. Every person delivering to a common carrier a package or parcel containing fish or game, shall place upon said package the name and address of the owner or consigner of said package or parcel, and also place upon such package a description of the contents thereon [thereof], containing the number of birds or animals of each kind and the number of fish of each variety. Any person violating the provisions of this section, shall upon conviction thereof, be punished by a fine of not less than ten dollars nor more than fifty dollars.

Unmarked packages: Sec. 12. It shall be unlawful and is hereby prohibited for any common carrier or agent, servant or employe of a common carrier, to receive for transportation or transport any package or parcel containing fish or game unless the same shall be labeled as provided in sections 10 and 11 of this article. Any person, firm or corporation violating the provisions of this section shall forfeit to the State of Nebraska a sum not less than twenty-five dollars nor more than one hundred dollars, in the discretion of the court.

Importation: Sec. 13. It shall be unlawful and is hereby prohibited for any person, firm or corporation acting as common carrier, to bring into this state any fish or game from any state during the time that such other state prohibits the transportation of such fish or game from said state to a point without the same. Any person, firm or corporation violating the provisions of this section shall forfeit to the state the sum of not less than twenty-five dollars nor more than one hundred dollars in the discretion of the court.

Game in transit: Sec. 14. It shall be unlawful and is prohibited for any person, firm or corporation or common carrier to ship into or through this state from any other state any fish or game prohibited by the laws of said state to be shipped or transported and it shall be the duty of the state fish and game commissioner of this state or his deputy to seize, hold and dispose of, according to the laws of this state, any fish or game brought into or shipped into this state, or carried through, or attempted to be carried through this state, prohibited to be so shipped or transported by the laws of any other state, and further to dispose of the same according to the laws of this state. Any person, firm or corporation violating the provisions of this act shall upon conviction thereof be fined in any sum not less than twenty-five dollars nor more than one hundred dollars, in the discretion of the court.

Shipment: Sec. 15. Any person, company or corporation, or any agent or servant of the same who shall, for compensation or otherwise, transport or offer or receive for shipment or transportation any animals, fish, fowls or birds for which a closed season is provided by law, during such closed season, or who shall transport or offer or receive for shipment or transportation to any place beyond this state any animals, fish, fowls or birds for which an open season is provided by law, during such open season, except as provided in section eight (8) of this article, shall forfeit not less than twenty-five dollars nor more than one hundred dollars for each such violation, to be recovered in a civil action brought in the name of the state fish and game commissioner or one of his deputies. The possession of any such animals, fowls or birds during the closed season therefor, for a shipment or in transit, shall be prima facie evidence of the violation of this section. Provided, however, that game and fish lawfully killed or taken during the open season may be lawfully carried out of the state at any time during the five days next following the end of such open season, under the provisions and restrictions hereinbefore provided. It shall be the duty of every person, whenever any animal, fish or game of any of the kinds the taking, catching or killing of which is prohibited by law at any or at all times (except during the periods in which the same may be lawfully taken, caught or killed), is offered to him for transportation out of the state, to at once notify and give full particulars concerning such offer and by whom made, to the state fish and game commissioner or one of his deputies. All sections of this act relating to the having in possession or under control, or the sale, shipment or transportation of any animal, fish, water-fowl or bird, shall be construed to include any and all parts of the flesh and meat thereof.

Storage: Sec. 16. It shall be unlawful to store or to receive for storage any game or fish within this state, except as follows, to-wit:

(1) During the open season for such game or fish, and for five days thereafter, when the same is stored for the person lawfully in possession thereof.

(2) At any time of the year when the same has been lawfully imported into this state.

Whoever violates any of the provisions of this section shall upon conviction thereof be fined in any sum not less than fifty dollars nor more than one hundred dollars or be imprisoned in the jail of the proper county not exceeding ninety days.

Hotels, etc.: Sec. 17. No game or fish shall be held in possession of or placed upon the table of any hotel, restaurant, cafe, or boarding house, or named on its menu or bill of fare as food for its patrons, either under the name used in this act or under any other name or guise whatever except during the open season therefor and for the period of five days thereafter.

Provided that game and fish confiscated under the provisions of this act shall be delivered to one or more of the public institutions for the care of the unfortunate or other charitable institutions.

Whoever violates any of the provisions of this section shall upon conviction thereof be fined in any sum not exceeding one hundred dollars, or be imprisoned in the jail of the proper county not exceeding thirty days.

ARTICLE IV.

License: Sec. 2. It shall be unlawful for any person not a bona fide resident of this state to pursue, hunt, kill or wound within this state any of the animals, birds or fish, or to fish for, or take out of this state any of the birds or fish protected by this act, except in accordance with the provisions hereof and without first having procured a license therefor, as in this act provided. Whoever violates the provisions of this section shall be punished by a fine not exceeding one hundred ($100) dollars or by imprisonment in the jail of the proper county not exceeding sixty (60) days for each of such offenses. And for the purpose of this section every such unlawful shipment, or offer for shipment and such unlawful hunting and fishing in each calendar day shall be deemed a separate offense.

Shipping under license: Sec. 5. The holder of any license authorizing him to ship or transport game or fish to any point outside of this state shall upon offering any such game or fish for shipment to any common carrier present to the agent, servant or representative of such carrier a true invoice of such shipment showing the number and kind of birds and the number and variety of fish thereof and shall at the same time deliver to such agent, servant or representative, his license issued pursuant to this act, and such agent, servant or representative shall at the time of receiving such consignment of game or fish, endorse upon such license with ink, the date of the receipt of such consignment with the number and varieties of such game or fish, so shipped or offered for shipment, together with the name of the consignee, and the point to which consigned. Every person shipping or offering for shipment or receiving as consignee or as agent, servant or representative of any common carrier any game or fish in violation of this act shall upon conviction thereof be fined in any sum not exceeding one hundred dollars or be imprisoned in the jail of the proper county not exceeding sixty days. And every common carrier receiving for shipment or transportation any game or fish in violation of this section shall pay to the State of Nebraska, not less than fifty ($50) dollars nor more than one hundred ($100) dollars. * * *

Approved — In force July 1, 1901.

NEVADA.

Statutes of 1901, chap. CX, pp. 122–124.

Sale: Sec. 7. It shall be unlawful at any time of the year for any person or persons, firm, company, tavern or hotel keeper, restaurant, or eating-house keeper, butcher, market man, or cold storage company to buy, sell, expose or offer for sale, or have in his or their possession for the purpose of sale, barter, exchange or trade, any dove, sagehen, prairie chicken, grouse, quail, pheasant, wild duck, wild goose, woodcock, sandhill crane, snipe, curlew, plover or bittern.

Hides: Sec. 11. It shall be unlawful for any person or persons, firm, company, corporation, or association at any and all times of the year to sell, buy, offer or expose for sale, transport, or carry, or have in his or their possession any deer or antelope, or any deer or antelope skin or hide from which the evidence of sex has been removed.

Shipping big game: Sec. 12. It shall be unlawful for any person or persons at any and all times of the year to kill, hunt, pursue, take, trap, destroy, transport, carry or have in his or their possession any female deer or fawn, female antelope or fawn, male or female caribou or fawn, male or female elk or calf, male or female mountain sheep or lamb, male or female mountain goat or kid.

Sale of big game: Sec. 13. It shall be unlawful in this State at any and all times of the year for any firm, company, tavern or hotel keeper, restaurant or eating-house keeper, butcher, market man, cold storage company or any person or persons to buy, sell, expose or offer for sale or have in his or their possession for the purpose of sale, barter, exchange or trade, the meat, skin, hide, horns or carcass, of any deer, antelope, elk, caribou, mountain sheep or mountain goat.

Permits: Sec. 15. * * * *Provided*, that nothing in this Act shall be so construed as to prohibit any resident person or persons, firm, company, corporation or association from taking (upon a written permit from the Governor of the State) any bird, fowl or animal for the purpose of propagation or domestication or scientific purposes.

Penalties: Sec. 17. Any person or persons, firm, company, corporation or association, or common carrier, violating any of the provisions of this Act shall be deemed guilty of a misdemeanor, and upon conviction thereof, be fined in any sum not less than twenty-five ($25) dollars nor more than two hundred ($200) dollars, or imprisonment in the county jail of the county in which said conviction is had, for any term not exceeding six months, or by both such fine and imprisonment. (It shall be no defense in the prosecution for the violation of any of the provisions of this Act, that the animals or birds were taken or killed outside the State of Nevada.)

Shipment: Sec. 18. Every railroad company, express company, transportation company or other common carrier, their officers, agents and servants, and every other person who shall transport, carry or take out of this State, or who shall receive for the purpose of transporting fron this State any deer, buck, doe or fawn or any mountain sheep or antelope, or any quail, sage, chicken, prairie chicken, grouse, dove, wild duck or goose, or the hide, horns, of any wild animals or the plumage of any wild birds (dead or alive) shall be guilty of a misdemeanor.

Approved March 28, 1901.

NEW HAMPSHIRE.

Public Statutes 1901, chap. ——.

Shipment: SEC. 31. No person, corporation or common carrier, shall at any time, within the limits of this state, transport any moose, caribou, elk or fawn, under penalty of a fine of fifty dollars, ($50,) but such person, corporation or common carrier, may show in defense that such animals came in the regular course of business into their possession for transit through the state from some place without the state.

Shipping deer: SEC. 32. No person, corporation or common carrier, shall transport within this state, any deer or any parts thereof except heads for mounting, unless open to view, tagged and plainly labeled with the name of the actual owner, and accompanied by him under the penalty of a fine of fifty dollars, ($50,).

Sale, deer: SEC. 33. No person shall sell any deer killed in this state, or parts thereof, except for consumption as food within the state, and no person shall buy for the purpose of selling the same, sell or give away more than two deer, killed in this state in any one season, under a penalty of one hundred dollars, ($100,) for each offense, except that the Blue Mountain Forest Association may kill deer, elk, and moose within the confines of its game preserve, as established by chapter 258 of the laws of 1895, until January 15 of each year, and may ship them to points without the state at any time when accompanied by a certificate of the fish and game commission that they were legally killed, and the fish and game commission shall provide rules and regulations as are necessary for the carrying out of the provisions of this paragraph without any expense to the state of New Hampshire.

Game birds defined: SEC. 34. * * * For the purposes of this act the following only shall be considered game birds: The Anatidæ, commonly known as swans, geese, brant, and river and sea ducks; the Rallidæ, commonly known as rails, coots, mud-hens, and gallinules; the Limicolæ, commonly known as shore birds, plover, surf birds, snipe, woodcock, sandpipers, tatlers, and curlews; the Gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges, and quails.

Birds for food: SEC. 42. If any person shall between the fifteenth day of December in any year and the fifteenth day of September next following, take, kill, or have in possession any woodcock, ruffed grouse, partridge, quail or Wilson snipe, or shall at any time take, kill, or have in possession any of said birds except for consumption as food within the state, he shall be fined ten dollars, ($10,) for each bird so taken or destroyed or had in possession, or imprisoned sixty days, or both.

Shipment, Birds: SEC. 46. If any person, corporation or common carrier, or any of their servants or agents, while in their employ, shall have in their possession for transportation out of the state or for transportation or for any other purpose when the same are protected by law, any of the birds mentioned in this act, [quail, partridge, ruffed grouse, woodcock, plover, Wilson snipe, sandpiper, yellowlegs, rail, beachbirds, duck (except sheldrake)], such person, corporation or common carrier shall be fined one hundred dollars, ($100,) for each offense, but such person, corporation or common carrier may show in defense that the birds came in the regular course of business lawfully into their possession for transit through the state from some place without the state.

Sale, Birds: SEC. 47. If any person shall at any time within this state, buy, sell, offer or expose for sale, any woodcock, partridge, or ruffed grouse, he shall for each bird bought and sold offered for sale or had in their possession, be fined five dollars, ($5,) or be imprisoned thirty days, or both such fine and imprisonment.

Approved March 20, 1901.

NEW JERSEY.

Laws of 1901, chap. 76, pp. 176-177.

Game birds defined: Sec. 1. * * * For the purpose of this act, the following only shall be considered game birds: The anatidæ, commonly known as swans, geese, brant and river and sea ducks; the rallidæ, commonly known as rails, coots, mud-hens and gallinules; the limicolæ, commonly known as shore birds, plovers, surf birds, snipe, woodcock, sandpipers, tatlers and curlews; the gallinæ, commonly known as wild turkeys, grouse, prairie chickens, pheasants, partridges, quails and doves,[1] and the species of icteridæ, commonly known as reed birds.

Approved March 20, 1901.

Laws of 1901, chap. 120, pp. 262–268.

Trapping rabbits: [Sec.] 3. Nothing in this act shall be so construed as to prevent farmers and fruit growers from trapping rabbits in box-traps during the months of November, December, January, February and March; *provided, however*, that such trapping shall be done on property owned or leased for the raising of fruit by the person so trapping; *provided*, that the person so trapping shall first have made an affidavit before a justice of the peace that rabbits have injured fruit trees, such fruit trees being on the property of the person so trapping, and shall have notified the nearest fish and game warden of his intention to so trap; *and provided further*, that no person shall be permitted to barter or sell any rabbits so trapped.

Sale: [Sec.] 11. It shall be unlawful to have in possession, sell or offer for sale, any hare (sometimes called rabbit), quail (sometimes called partridge), ruffed grouse (sometimes called partridge or pheasant), ring-necked pheasant, English pheasant, woodcock, pinnated grouse (sometimes called prairie chicken), English or Wilson snipe, reed bird, rail bird, marsh hen, grass or upland plover, squirrel, duck, or any of the game birds or game animals enumerated in this act, after the same has been caught or trapped by means of any snare, snood, net, trap or device of any description whatsoever, or to set any snare, snood, net, trap or device for catching or trapping any such game bird or animal, under a penalty of twenty dollars for each such bird or other animal so had in possession, sold or exposed for sale, or for any trap or snare so set.

Sale seasons: [Sec.] 13. Whenever by this act the possession of any kind of game is prohibited after a certain specified date or within certain specified periods of time, all sales of dealers in game for a period of thirty days after the expiration of such fixed period or specified date shall prima facie be deemed lawful, and the penalties herein imposed for the possession of such game shall not apply to any dealer in or the purchaser of any such game, within the extended period, unless it shall be shown that such dealer or purchaser had knowledge that such game had been unlawfully killed, captured or taken; nothing in this section, however, shall be construed to permit the possession, sale or purchase of game killed or taken in this state in violation of any of the provisions of this act.

Propagation: [Sec.] 15. Nothing in this act shall be so construed as to prevent associations or individuals from bringing into this state any birds or other animals for the purpose of propagation, or from keeping such animals until a seasonable time for their release.

Export: [Sec.] 26. It shall be unlawful to remove or to attempt to remove from this state any quail, ruffed grouse, pinnated grouse, woodcock, hare, squirrel, English pheasant or ring-necked pheasant; *provided, however*, that this section shall not apply to common carriers carrying from beyond the confines of this state in unbroken packages to some point beyond the confines of this state, such quail, ruffed grouse, pinnated grouse, woodcock, hare, squirrel or pheasant; any person guilty of any violation of this section shall be liable to a penalty of twenty dollars for every quail, ruffed grouse, pinnated grouse, woodcock, hare, squirrel or pheasant removed or sought to be removed; *provided, however*, that this section shall not apply to English or ring-necked pheasants killed on preserves at present established.

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[1] Doves belong to the columbæ, not the gallinæ.

Approved March 22, 1901.

NEW MEXICO.

Compiled Laws, 1897, p. 394.

Sale: SEC. 1362. It shall be unlawfull to sell or expose for sale, at any time, any of the game, birds or animals, the killing of which is prohibited or restricted by this act [deer, elk, antelope, mountain sheep, ibex, mountain goat, quail, partridge, grouse, prairie chicken, pheasant, wild turkey], or to sell the flesh, hide or any part thereof. It shall be unlawful to sell any speckled trout, or other food fish, caught in any of the public waters of the Territory: *Provided*, That it is not the intention of this act to prevent dealers and butchers from selling any game, birds or animals killed outside the boundaries of this Territory.

In any trial for the violation of the provisions of this act, the burden of proof shall be upon such dealers or butchers to prove that such birds or animals were killed without the boundaries of this Territory.

Export: SEC. 1363. It shall be unlawful for any railway, express company, stage line, or public carrier, to transport outside the Territory, or receive for such transportation, any of the game, birds or animals mentioned in this act, or the flesh or hides thereof, that may be offered for such transportation at any place in this Territory.

Propagation: SEC. 1364. Nothing in this act shall prevent professional taxidermists from killing birds or animals for the purpose of preserving the same, nor any person from capturing or taking any of said birds or animals for the purpose of domesticating or preserving the same in parks or inclosures within this Territory: *Provided*, Such taxidermists or other persons must prove that such birds or animals have been preserved and used for such purpose. Birds or animals so taken for such purposes may be shipped out of the Territory, only upon written permit from some duly appointed warden of this Territory.

Penalties: SEC. 1365. Any person or persons, or the officer, agent or employee, of any firm or corporation, who shall violate any of the provisions of this act, shall be deemed guilty of a misdemeanor and upon conviction thereof, before any justice of the peace, or other court of competent jurisdiction, shall be punished for each offense by fine in a sum not less than twenty-five dollars nor more than one hundred dollars, or by imprisonment in the county jail for not less than thirty, nor more than sixty days, or by both such fine and imprisonment, at the discretion of the court or justice trying the case.

NEW YORK.

Laws of 1900, chap. 20.

ARTICLE I. QUADRUPEDS.

Sale, Deer: SEC. 4. [As amended by chap. 599, Laws of 1900.] Wild deer or venison shall not be possessed or sold from November twenty-first to August thirty-first both inclusive. Possession thereof from the sixteenth to the twentieth of November shall be presumptive evidence that the same was unlawfully taken by the possessor.

Moose, Elk, etc.: SEC. 11. [As amended by chap. 147 of the Laws of 1901.] There shall be no open season for wild moose, elk, caribou or antelope, but they may be brought into the state for breeding purposes. The flesh or any portion of any such animal shall not be possessed, sold or transported during the close season for deer or during the open season for deer unless the animal was killed without the state or by the owner thereof in a private park within the state during the open season for deer. Possession thereof during such open season shall be presumptive evidence that it was unlawfully taken by the possessor. * * *

Penalties: SEC. 16. (As amended by chap. 147, Laws of 1901.)—A person who violates any provision of this article is guilty of a misdemeanor, and in addition thereto, is liable as follows: For each violation of sections one to eleven, both inclusive, to a penalty of one hundred dollars, and for each deer, elk, caribou, antelope or part of any such animal taken or possessed in violation of any provision of any of said sections, an additional penalty of one hundred dollars; for each wild moose or part of such animal taken or possessed in violation of any provision of said sections, an additional penalty of two hundred and fifty dollars; * * * A person convicted of a misdemeanor for a violation of section eleven of this article shall be punished by imprisonment for a term of not less than three months nor more than one year.

ARTICLE II. BIRDS.

Sale, Birds: SEC. 28. Woodcock, grouse and quail shall not be sold or possessed during the close season, except in the month of December, and possession or sale thereof during the last fifteen days of December shall be presumptive evidence that they were unlawfully taken by the possessor.

Shipment: SEC. 29. Woodcock, grouse and quail shall not be transported within this State or into the State from a point without the State less than twenty-five miles from the State line unless accompanied by the actual owner thereof, and no person shall transport or accompany more than thirty-six grouse or thirty-six woodcock in any calendar year, or more than twelve of either kind at one time. Possession thereof by a common carrier, or employee thereof, at the time actually engaged in the business of such common carrier, unaccompanied by the actual owner thereof, shall constitute a violation of this section by such employee and common carrier. No common carrier or person in its employ shall transport such birds as owner.

Export: SEC. 38. [Added by chap. 235.] Birds or game, except fish, taken in this State shall not be transported without the State; nor shall the same be taken or possessed with intent to transport the same without the State. Any person doing any act with reference to such birds or game in aid of such taking or transportation with knowledge of the intention to so transport the same shall be deemed to have violated this section.

Penalties: SEC. 39. A person who violates any provision of this article is guilty of a misdemeanor, and is liable to a penalty of sixty dollars and to an additional penalty of twenty-five dollars for each bird or part of bird taken or possessed in violation thereof.

NORTH CAROLINA.

Code, 1883, II, chap. 21, p. 235.

Export: SEC. 2835. No person shall export or transport from the State any quail or partridges, whether dead or alive, and any person violating this section shall be guilty of a misdemeanor, and fined not exceeding fifty dollars or imprisonment not more than thirty days for each offense. (1876–77, c. 195; 1880, c. 57.)

Besides this general State law the following special county laws relating to shipment and sale are in force:

County Laws.

Cleveland: [Unlawful to export or transport from county partridge. Penalty not exceeding $25 or imprisonment not exceeding 20 days. Acts 1901, chap. 400, secs. 2 and 3.]

Halifax: [Unlawful to buy, sell, or hunt, shoot, or trap for hire quail, partridge. Penalty not exceeding $50 or imprisonment for not exceeding 30 days. Acts 1901, chap. 538, sec. 1.]

Henderson: [Unlawful to sell or export birds, game, or wild fowl of any kind. Penalty $2 to $10 or 5 to 10 days. Acts 1901, chap. 437, secs. 3, 4, and 6.]

Lenoir: [Unlawful to hunt for export from county for sale quail, partridge. Penalty not exceeding $50 or imprisonment for not less than 30 days. Acts 1895, chap. 423, secs. 1 and 2.]

Rowan: [Unlawful for express or railroad company to receive and ship packages of game not plainly marked so as to show kind or class of game. Acts 1895, chap. 177, sec. 2.]

[Unlawful to sell or export from county quail, partridge, grouse, pheasant, wild turkey, dove, woodcock. Penalty not exceeding $100 or imprisonment not exceeding 60 days, or both. Acts 1901, chap. 295, secs. 4, 5, and 6.]

Warren: [Unlawful to buy, sell, or hunt, shoot, or trap for hire quail, partridge. Penalty not exceeding $50 or imprisonment for not exceeding 30 days. Acts 1901, chap. 538, sec. 1.]

Yancey: [Unlawful to export from county quail, partridge. Penalty fine or imprisonment in discretion of court. Acts 1901, chap. 61, secs. 1 and 2.]

NORTH DAKOTA.

Revised Codes, 1895, chap. 72, p. 1363.

Export: [Sec.] 7683. Every person who within this State ships or receives for shipment beyond the limits of this State any of the game birds or animals mentioned in section 7677 [prairie chicken, pinnated grouse, sharp-tailed grouse, ruffed grouse, woodcock, plover, wild duck, wild goose, brant, buffalo, elk, deer, antelope, caribou, mountain sheep] * * * is guilty of a misdemeanor, and upon conviction thereof is punishable by a fine of ten dollars for each game bird or fish so shipped or received and one hundred dollars for each animal so shipped or received.

Session Laws of 1901, chap. 104, p. 132.

Sale: Sec. 1. Every person who sells or exposes for sale, or has in his possession, with intent to sell or ship, for the purpose of selling to any person within the State, by common or private carrier, at any time, any prairie chickens, pinnated grouse, sharp-tailed grouse, ruffled grouse, woodcock, or deer, is guilty of a misdemeanor, and upon conviction thereof before any justice of the peace of the county, is punishable by a fine of not exceeding ten dollars for each of the game birds or deer herein mentioned, sold, exposed for sale, or shipped, or had in his possession with the intent to sell or ship as aforesaid.

Approved March 12, 1901.

OHIO.

Revised Statutes, 1897 (as amended by General Acts of 1898, Vol. XCIII, p. 108).

Sale, Export: Sec. 6964. * * * Whoever purchases, sells or exposes for sale, or has in his possession, any dove, except between the fourth day of July and the fifteenth day of December, inclusive; or any snipe, rail, killdeer or plover, except between the first day of September and the fifteenth day of May, inclusive; or any coot or mud hen, or wild duck, except between the first day of September and the fifteenth day of April, inclusive; or any Mongolian pheasant, English or ring-neck pheasant, before the tenth day of November, 1903, or after that date, except between the tenth day of November and the fifteenth day of December, inclusive; or any of the song or insectivorous birds mentioned in section 6960; or whoever shall at any time, catch or kill, any quail, wild turkey, ruffed grouse or pheasant, prairie chicken, woodcock, squirrel, Mongolian pheasant, or English or ring-neck pheasant, for the purpose of conveying the same beyond the limits of this State, or for sale in the markets of this State, or shall transport or have in possession with intent to procure the transportation beyond the limits of this State, or for sale in the markets of this State, any quail, wild turkey, ruffed grouse, or pheasant, prairie chicken, woodcock, squirrel, Mongolian pheasant, or English or ring-neck pheasant, killed within this State, shall be fined as provided in section 6968. And in addition thereto, shall be liable to a penalty of twenty-five dollars for each bird trapped or possessed contrary to the provisions of this act. The reception by any person within this State of any such birds, game or animals, for shipment to a point without the State, shall be prima facie evidence that such birds, game or animals were killed within this State for the purpose of conveying the same beyond its limits; *Provided*, that the provisions of this act shall not be construed as applicable to any common carrier into whose possession any of the birds, game or animals herein mentioned, shall come in the regular course of their business for transportation, while they are in transit through this State from any place without this State, where the killing of such birds, game or animals shall be lawful, but nothing in the provisions of this act shall prevent any one having in his possession wild deer during the time when the killing thereof is made penal. Any game warden or deputy game warden in this State shall have authority and right, at any time, to open packages, boxes, crates or other receptacles containing the birds, game or animals prohibited by this act from being transported without the limits of this State, delivered to a common carrier for transportation out of the State, and shall take and confiscate such birds, game or animals about to be transported out of the State and deliver them to some hospital, infirmary or charitable institution.

Passed April 12, 1898.

Penalties: Sec. 6968. [Any person convicted of any violation of any of the provisions of this act shall be fined not less than twenty-five (25) dollars nor more than one hundred (100) dollars, and in case of neglect or refusal to pay said fine, be imprisoned in the county jail or workhouse, and shall there remain for the full period of thirty days. (Revised Statutes, 1897.)]

OKLAHOMA.

Session Laws of 1899, Chap. XV, pp. 165–167.

Legal sale: Sec. 3. Any person having lawfully taken any of the game mentioned in this Act, or any person lawfully having any of said game [prairie chicken, grouse, quail, wild turkey, plover, dove] in his possession, may sell the same to persons living in the Territory of Oklahoma, for consumption therein.

Imported game: Sec. 4. No person shall at any time have in possession or under control any birds, game or fish caught, taken or killed outside of this Territory, which was caught, taken or killed at a time, in a manner, or for a purpose forbidden by the laws of this Territory or the State, Territory or country where the same was caught, taken or killed, or which was shipped out of said State, Territory or country in violation of the laws thereof.

Evidence: Sec. 5. [Possession of birds or game at a time prohibited by the laws of this Territory shall be *prima facie* evidence that it was killed in this Territory. Whenever it shall appear that any birds or game, the killing of which is at any time prohibited by the laws of this Territory, was killed outside of this Territory, it shall be *prima facie* evidence that such bird or game was killed at a time, in a manner, and for a purpose prohibited by the laws of the Territory, State, or country where killed, and was exported out of said Territory, State, or country in violation of the laws thereof.]

Sale: Sec. 6. No person, company or corporation shall sell or attempt to sell, or expose for sale, or have in possession or under control, for the purpose of selling or exposing for sale, any kind of bird, game or fish at any time, when the taking, catching or killing of such kind of birds, game or fish is prohibited by the laws of this Territory.

Penalties: Sec. 7. [Violation of any of the provisions of sections 4, 5, and 6 of this act shall be deemed a misdemeanor, punishable by a fine of not less than ten, nor more than fifty dollars and costs of prosecution, and in default of payment thereof by imprisonment not exceeding sixty days.]

Export: Sec. 10. It shall be unlawful for any person, company or corporation within this Territory to export or carry to any other Territory, or State or country any game or the parts of any game mentioned in this Act, and any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars, and costs of suit, and shall be committed to the common jail of the county wherein the offense was committed until such fine and costs are paid.

Export, Propagation: Sec. 11. It shall be unlawful for any railroad company, express company or other common carrier, their officers, agents, servants or any other person or persons to purchase or receive within this Territory any of the game mentioned in Section 1, of this Act, or any meat or parts of such game, for the purpose of transporting or carrying the same beyond the limits of this Territory or in any manner handling the same, or to transport or carry any of said game or meat or part thereof beyond the limits of this Territory. Except that the provisions of this section shall not apply to fine birds or animals captured and held for domestic or scientific purposes: *And provided,* That not more than one pair of such birds or animals may be shipped at any one time. And any agent, officer or servant of any railroad company, express company or other common carrier, or any other person or persons violating any of the provisions of this section shall be deemed guilty of a misdemeanor, and on conviction, shall be fined in any sum not less than fifty dollars nor more than five hundred dollars, with cost of suit. And any railroad company, express company of [or] other common carrier violating any of the provisions of this section shall forfeit and pay to the Territory of Oklahoma, for each violation thereof, the sum of two hundred dollars, together with all costs of suit, to be recovered in a civil action to be instituted in the name of the Territory of Oklahoma by the county attorney of any county wherein said suit is brought, which sum of two hundred dollars shall be collected upon execution as in civil cases.

Approved, March 10th, 1899.

OREGON.

General Laws of 1901, pp. 217-236.

Fawn: Sec. 2. It shall be unlawful at any time to hunt, pursue, take, kill, injure, destroy or have in possession, or to sell or offer for sale, barter or exchange, any spotted fawn.

Elk: Sec. 4. It shall be unlawful to hunt, pursue, take, kill, injure, destroy or have in possession, or to sell or offer for sale, barter or exchange, any elk at any time between the date of the passage of this act and the fifteenth day of September, 1904; and from and after said fifteenth day of September, 1904, it shall be unlawful to hunt, pursue, take, kill, injure, destroy or have in possession, or to sell or offer for sale, barter or exchange, any elk at any time between the fifteenth day of October of each year and the fifteenth day of September of the following year. And from and after said fifteenth day of September, 1904, it shall be unlawful for any person to take, kill, capture, destroy or have in possession more than one elk in the open season of any year; and it shall be unlawful at any time to sell or offer for sale, barter or exchange, or to have in possession for sale, barter or exchange, any elk meat.

Hides, etc.: Sec. 5. It shall be unlawful at any time to hunt, pursue, take, kill, injure, destroy or have in possession any dear [deer], elk, moose, mountain sheep or spotted fawn for the purpose of obtaining the skin, hide, horns, hams or other flesh of such animal for the purpose of sale, barter, exchange or trade, except as hereinafter provided; and it shall be unlawful at any time for any person, company, firm or corporation to buy, offer to buy, or sell or offer for sale, or have in possession for sale, or to transport or carry for purposes of trade, sale, barter or exchange, the skin, hide, horns, hams or other flesh of any deer, elk, moose, mountain sheep or spotted fawn, except as hereinafter provided. Any person who shall lawfully kill deer during the open season named in this act, not to exceed five deer, may make an affidavit before any justice of the peace, setting forth the date of killing of each deer and that the same was killed by the affiant; and said justice of the peace taking said affidavit shall, unless he have reason to believe that said affidavit is false or that the affiant has violated this act, thereupon deliver to the affiant one leather tag of the character hereinafter described for the hide of each deer covered by said affidavit, not exceeding five in all; and the person so receiving such tag or tags shall securely fasten with wire one tag to each deer skin, and shall thereupon be entitled to offer said deer skin for sale or exchange or transportation to any point within the state. The tags above referred to shall be designed and issued by the State Game and Forestry Warden, and shall bear a stamp impressed by him containing a number and the year of issue and such other words or figures as he may determine. * * * Such affidavit [above referred to] may also be taken by and filed with any county clerk of the county court of any county, who may issue tags direct to affiants under the regulations hereinbefore mentioned. The fees of the county clerks, clerks of the county court and justices of the peace for taking the affidavits hereinbefore required shall be the same as provided by general law for the same purpose, and each justice of the peace transmitting any such affidavits may make an additional charge to the affiant of ten cents therefor. No tag shall be issued to any person in any year for any deer hide after the expiration of five days from the close of the open season for deer, nor shall more than five of such tags ever be issued to one person in any one year. It shall be unlawful for any person to buy, sell or offer for sale, or receive for any purpose, or transport or carry any deer hide within this state unless the same shall have attached thereto a leather tag as hereinbefore provided. Any person who shall willfully make a false affidavit for the purpose of securing any tag hereinbefore mentioned, or who shall counterfeit or alter, or attempt to counterfeit or alter, any such tag issued by the State Game and Forestry Warden, shall be guilty of a violation of this act, and shall be punished as hereinafter provided.

Sale, Pheasant, grouse, quail: Sec. 23. It shall be unlawful within the State of Oregon to sell, exchange, or offer for sale or exchange, for money or other valuable consideration, or to take or kill for sale, or to have in possession for sale or exchange, except for scientific or breeding purposes, any pheasant, grouse or quail, at any time except during the last fifteen days of the open season for the killing of such grouse, pheasant or quail as hereinbefore provided in this act; *provided however*, that this section shall not be construed to in anywise change or alter any of the provisions of this act respecting said game birds; *provided further*, that every person, firm or corporation who shall, within the State of Oregon, purchase, or receive for the purpose of sale, or exchange or barter, or who shall sell or exchange or barter any grouse, pheasant or quail, shall keep a plain and true record, in book form, of every purchase or reception of any such game birds made by him, showing the date of purchase or receipt, and from whom purchased or received, and the number of birds of each kind purchased or received, and such record shall be open for inspection by the State Game and Forestry Warden, or any of his deputies, at all reasonable times. Any person, firm or corporation who shall receive or purchase, and sell or exchange or barter, or offer for sale, any of the game birds mentioned in this section without keeping such record as hereinbefore provided, or who shall fail or refuse to exhibit such record on demand at any reasonable time to the State Game and Forestry Warden, or any of his deputies, shall be guilty of a violation of this act, and upon conviction thereof shall be punished as hereinafter provided.

Definitions: SEC. 37. Whenever the phrase "scientific use" or "scientific purpose" is mentioned in this act, the same shall be deemed to include only the examination and study of any bird or animal for the acquisition of knowledge thereof, and shall not include the taking of any bird or animal for mounting or preservation by taxidermy or otherwise for the purpose of sale, barter or exchange.

Storage: SEC. 40. Every cold storage company, person keeping a cold storage warehouse, tavern or hotel keeper, restaurant, club or eating-house keeper, market man or other person who shall buy, sell, expose or offer for sale, or give away or have in his possession, any of the wild animals, wild fowl, game birds or fish enumerated in this act during the time when it shall be unlawful to kill or have such animals, fowl, birds or fish in possession or sell the same, as in this act provided, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided. It shall be no defense to a prosecution for a violation of this section that the wild animals, wild fowl, game birds or fish were taken or killed outside of this state.

Marking packages: SEC. 41. (*a*) All parcels, packages, crates, barrels, boxes or other receptacles containing any of the wild animals, wild fowl, game birds or fish enumerated in this act shall be labeled in plain letters on the address side of the package so as to disclose the fact that such parcel, package, crate, barrel, box or other receptacle contains wild animals, wild fowl, game birds or fish, and the nature of the wild animals, wild fowl, game birds or fish contained therein. And it shall be unlawful for any person to deliver to any common carrier for transportation any such parcel, package, crate, barrel, box or other receptacle containing any such wild animals, wild fowl, game bird or fish which shall not have been labeled as herein required, or to the [sic] place thereon a false statement as to the contents thereof.

(*b*) Every person delivering to a common carrier a parcel, package, crate, barrel, box or other receptacle containing any wild animals, wild fowl, game bird or fish, shall place upon said parcel, package, crate, barrel, box or other receptacle the name and address of the owner or consignor thereof, and it shall be unlawful, and it is hereby prohibited, for any common carrier or agent, servant or employee of a common carrier to receive for transportation or transport any parcel, package, crate, barrel, box or other receptacle containing any wild animal, wild fowl, game bird or fish, unless the same shall be labeled as in this act provided.

Export: SEC. 42. Every steamboat company, railroad company, express company or other common carrier, their officers, agents and servants, and every other person who shall transport, carry or take out of this state, or who shall receive for the purpose of transportation from this state, any of the wild animals, wild fowl, game birds or fish enumerated in this act, except for the purpose of propagation or exhibition, or who shall transport, carry or take from this state, or receive for the purpose of transportation from this state, any such wild animal, wild fowl, game birds or fish, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided; *provided*, that the right to transport for the purpose of propagation or exhibition shall first be obtained by permit in writing from the State Game and Forestry Warden; *provided however*, that upon the granting of a similar privilege by the legislature of the State of Washington[1] to the citizens or residents of the State of Oregon, nothing in this section shall be construed to prevent any citizen or resident of the State of Washington from personally taking with him any trout, other game fish, or game to the limit of one day's hunt or fish, killed or captured by himself in the State of Oregon, when it is lawful to take, kill, or capture the same; but this provision shall be strictly construed, and shall not be interpreted so as to permit the transportation of trout, other game fish, or game out of the State of Oregon by any steamboat company, railroad company, express company or other common carrier for any purpose whatever, except as hereinbefore provided.

Penalties: Sec. 43. Except as hereinafter provided, any person or persons violating any of the provisions of this act, or any other act or parts of acts for the protection of forests, wild animals, game, wild fowls, game birds, song birds, trout or other game fish not in conflict herewith, and for which no penalty is fixed, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not less than $15 nor more than $200, together with the costs of prosecution of said action, or by imprisonment in the county jail of the county wherein such offense may have been committed not less than seven nor more than one hundred days, or by both such fine and imprisonment; *provided however:*

(*a*) That any person or persons violating any of the provisions of sections 2, 3, 4, or 5 of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less that $25 nor more than $500, together with the costs of the prosecution of said action, or by imprisonment in the county jail of the county wherein such offense may have been committed not less than thirty days nor more than one hundred and twenty days, or by both such fine and imprisonment.

(*e*) That any person, firm, or corporation violating any of the provisions of sections 40, 41, or 42 of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less that $100 nor more than $500, together with the costs of the prosecution of such action, and any such person or persons may be imprisoned in the county jail of the county wherein such offense may have been committed not less than thirty days nor more than one hundred and twenty days, or be punished by both such fine and imprisonment.

Approved February 27, 1901.

PENNSYLVANIA.

Laws of 1897, No. 103, pp. 125–126.

Sale: Sec. 5. That it shall be unlawful at any period or season of the year to kill, entrap, or pursue with intent to kill or entrap, any elk, deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock in any part of this Commonwealth for the purpose of selling the same. And it shall be unlawful for the proprietor, manager, clerk or agent of any market or other person, firm or corporation, to purchase, sell or expose for sale any elk, deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock killed or entrapped within this Commonwealth. That it shall be unlawful for the proprietor, manager, clerk or agent of any market or any other person, firm or corporation to purchase for the purpose of again selling the same any elk, deer, fawn, wild turkey, pheasant, grouse, quail, partridge or woodcock killed or entrapped within this Commonwealth. Whoever shall offend against any of the provisions of this section shall be liable to a penalty of one hundred dollars for every elk, deer, [or] fawn, so taken, purchased or sold, and twenty-five dollars for every wild turkey, pheasant, grouse, quail, partridge or woodcock so taken, purchased or sold, or by imprisonment in the county jail for a period of one day for each dollar of penalty imposed.

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[1] Same privilege granted by Washington. (See p. 129.)

Export: Sec. 6. No person or persons, company or corporation, or the agent or the employe thereof shall, at any time, catch, take or kill, or have in his or its possession or under his, her or its control, any of the birds or game mammals of this State, the killing of which at any or all times is prohibited by the laws of this State, with intent to ship or remove the same beyond the limits of this State, or with intent to allow or aid in the shipment or removal thereof out of this State; and it shall not be lawful for any person or persons, railroad company, express company stage driver or any company or corporation, or person or persons acting in the capacity of a common carrier, their officers or employes, to knowingly receive for transportation or transport or remove beyond the limits of the State any of the game birds or game mammals mentioned in this act; * * * Whoever shall offend against any of the provisions of this section shall be liable to a penalty of not less than fifty dollars, nor more than one hundred dollars, for each and every offense, or by imprisonment in the county jail for a period of one day for each dollar of penalty imposed: *Provided*, That no penalty shall apply to the transportation of such game birds and game mammals in transit through the State from other States.

Approved June 4, 1897.

RHODE ISLAND.

Act of May 4, 1900.

Sale: Sec. 1. Every person who shall take, kill, destroy, buy, sell, or offer for sale, or have in his possession any wild bird, or birds, at any season of the year, except as hereinafter provided,[1] shall be fined twenty dollars for each of such birds.

Sec. 12. * * * Every person who shall take, kill, destroy, sell, buy, or offer for sale, or have in his possession any pheasant, before the first day of October nineteen hundred and five, shall for each offense be fined twenty dollars, provided that the word pheasant shall not be construed to apply to the birds commonly called partridge or ruffed grouse.

Export: Sec. 13. Every person who shall carry or send beyond the line of this State, any wood-cock, quail, or ruffed grouse commonly called partridge, shall be fined twenty dollars for each of said birds.

SOUTH CAROLINA.

Laws of 1900, p. 450.

Sale, Export: Sec. 431. It shall not be lawful for any person, except upon his own lands, or upon the lands of another with the consent of the owner thereof, to net or trap a partridge, and it shall be unlawful for any person to sell, offer for sale, or ship or export for sale, any partridge or quail for the space of five years from the approval of this Act: *Provided*, That nothing in this Act shall prevent the importation for sale of any partridge or quail. Any person violating this section shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not exceeding thirty dollars, or by imprisonment in the county jail for a term not exceeding thirty days.

Approved February 9, 1900.

SOUTH DAKOTA.

Session Laws of 1899, chap. 90, pp. 112–113.

Export: [Sec.] 3. It shall be unlawful for any person, railroad company, express company, or other common carrier, or the servants or agents of such common carrier, at any time to send, ship, carry or transport out of this State, or to have in his or their possession for that purpose any game mentioned in this Act [quail, prairie chicken or pinnated grouse, sharp-tailed grouse, ruffed grouse, plover, curlew, woodcock, wild duck, goose, brant, crane] and the possession of such game by any person, railroad company, express company or other common carrier shall be deemed presumptive evidence of the violation of the laws of this State enacted for the protection of game: *Provided*, nothing in this Act shall be construed to abridge or repeal any existing laws of this State prohibiting the sale of game within this State: *Provided*, nothing in this section shall prevent any person from taking game during the open season, and three days thereafter, out of the State when shipped in open view, tagged and plainly labeled with the name of the owner thereof, and accompanied by him, to be used for food only, and not for commercial purposes, and in no instance shall any person be permitted to take out of the State, at any one time, a greater number than twenty-five birds. Any person, corporation or company violating any of the provisions of this section, shall be punished by a fine of not less than ten dollars, nor more than fifty dollars for each offense.

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[1] For close seasons see p. 29.

Attempt to violate: [SEC.] 4. Any attempt to violate any provision of any section of this Act shall be deemed a violation of such provision.

Approved, March 6, 1899.

Session Laws of 1901, chap. 132, pp. 222–224.

Sale: SEC. 8. Any person or persons whatever who shall sell or offer for sale within the state of South Dakota, at any time, any carcass or parts of a carcass of any of the game animals named in this act [buffalo, elk, deer, mountain sheep], except as hereinafter provided, is guilty of a misdemeanor.

Export: SEC. 9. It shall be unlawful for any railway company, express company, or other common carrier, or the servants or agents of such common carrier, or any other person, persons or corporations at any time to send, ship, carry or transport out of this state any carcass or parts of a carcass or carcasses of any game animals named in this act, except as hereinafter provided.

Sale: SEC. 12. It shall be unlawful for any person, in any one year to kill more than one elk, one buffalo, three deer, and one mountain sheep. Any person having lawfully killed any of the said animals is entitled to the use and possession of the whole of such animal killed; but the barter or sale of the carcass or any part thereof of such animal or animals so killed is hereby prohibited; provided that the skins, heads and antlers of animals lawfully killed may be sold. The possession of the carcasses, skins, heads or antlers of such animals in excess of the number as herein provided shall be considered prima facie evidence of the violation of the provisions of this section, except when in the possession of an operating taxidermist for stuffing or mounting.

Certificates: SEC. 13. Every person, who may wish to transport beyond the limits of this state, any carcass or carcasses, heads, antlers, scalp or skins of any of the game animals named in this act, shall first procure from a justice of the peace of the state a certificate to the effect that such carcass or carcasses, head, heads, antlers or skins were taken from animals lawfully killed. For such certificate a fee of twenty-five cents may be charged by the justice. The giving of a false certificate is hereby declared to be a misdemeanor. Such certificate shall become void after five days from the date thereof. If such carcasses, heads, antlers, scalp or skins are transported by another than the owner, such certificate shall be presented to and retained by the person or corporation so carrying or transporting the same or his or its agent, before such carcasses, etc., are billed for shipment or carried or transported, and such certificate and the possession thereof shall be a sufficient justification for the transportation of such carcasses, etc., beyond the limits of this state.

Penalties: SEC. 19. Where the violation of the provisions of this act is not herein otherwise defined and penalties for a violation provided, every violation of any of the provisions of this act is hereby declared to be a misdemeanor, and upon conviction thereof or of any offense named herein for which no penalty is provided, the person or corporation so offending shall be fined not less than twenty-five nor more than two hundred dollars, and if such offending party be a natural person, imprisonment in the county jail not more than thirty days may also be imposed, in the discretion of the court. * * * Upon conviction, the gun or guns, carcass or carcasses, seized at the time of the arrest of such person so convicted, shall be forfeited, and the court before whom such conviction is had may, upon due proof, adjudge the same to be forfeited and order the same to be sold at public or private sale and the proceeds of such sale shall be paid to the county treasurer and by him placed in the game fund of the county.

Approved March 8, 1901.

TENNESSEE.

Acts of 1897, chap. 55, pp. 195–196.

Export: SEC. 1. * * * That it shall be unlawful for any person to export quail, dead or alive, out of the State of Tennessee, for five years from and after the passage of this Act.

Penalty: SEC. 2. * * * That any person violating the first section of this Act shall be deemed guilty of a misdemeanor, and, upon conviction before any court having jurisdiction, shall be fined not less than five nor more than ten dollars for each quail so exported.

Approved, March 24, 1897.

Besides this general State law, the following special county laws relating to shipment and sale are in force:

Code of 1896.

Carter, Greene, Hawkins, Johnson, Sullivan, Unicoi, Washington. [Unlawful to export from State quail, partridge, pheasant, wild turkey, woodcock. Penalty $25–$50 or not less than 10 days. Secs. 2948, 2949.]

Gibson. [Unlawful to export from county quail. Penalty $5–$25 and imprisonment at discretion of court. Secs. 2930, 2931.]

Grainger, Hamblen. [Unlawful to export from county quail, partridge. Penalty $25–$50 or not less than 10 days. Secs. 2953, 2954.]

Acts of 1897.

Anderson, Rutherford, Sumner, Tipton, Williamson. [Unlawful to buy, sell, or export from county quail, partridge, pheasant, grouse, prairie chicken. Penalty $5–$25 or imprisonment for not exceeding 30 days, or both. Chap. 157, sec. 3, p. 344.]

Benton. [Unlawful to buy for export from county squirrel, quail, partridge. Penalty ———. Chap. 146, p. 334.]

Bradley. [Unlawful to kill, capture, purchase, or have in possession for export for profit from county quail, partridge. Penalty $5–$50 for each offense. Chap. 177, secs. 1, 2, p. 388.]

Carroll, Crockett, Madison, Obion. [Unlawful to kill for export or to export from county quail, partridge. Penalty $10–$50 and imprisonment in discretion of court. Chap. 250, secs. 1, 2, p. 564.]

Dyer. [Unlawful to export or receive for exporting from county for profit quail, partridge. Penalty $10–$25 and not exceeding 10 days. Chap. 289, secs. 3, 4, p. 612.]

Grundy, Van Buren. [Unlawful to export from county quail, partridge. Penalty $5–$10. Chap. 172, secs. 3, 4, p. 381.]

Hawkins. [Unlawful to export for profit from county quail, partridge. Penalty $25–$50, and imprisonment in discretion of court. Chap. 220, secs. 3, 4, p. 526.]

Haywood. [Unlawful to kill or capture for profit in county or export from county quail, partridge, pheasant, wild turkey, woodcock. Penalty $5–$25, first offense; $25–$50, each subsequent offense. Chap. 203, secs. 2, 4, 5, p. 420.]

Henderson. [Unlawful to export for profit from county quail, partridge. Penalty ———. Chap. 190, p. 405.]

Lauderdale. [Unlawful to export from county deer, quail, wild turkey, duck. Penalty $10–$25 for each deer or bird. Chap. 206, secs. 2, 4, p. 402.]

Warren. [Unlawful to kill or capture for sale or export from county or for railroad or express company or wagoner to ship, haul or transport from county, deer, quail, partridge, pheasant, Chinese pheasant, grouse, wild turkey, duck. Penalty (for transporting, etc., by railroad company, etc.,) $10–$25. Chap. 191, secs. 4, 6, 7, p. 406.]

Weakley. [Unlawful to export, receive for exporting, carry or cause to be carried from county, quail, partridge, pheasant, wild turkey, duck. Penalty $25–$50 and imprisonment at discretion of court. Chap. 319, secs. 3, 4, p. 677.]

Acts of 1899.

Hamblen. [Unlawful to export or kill or capture for export from county quail, partridge. Penalty $10–$50 and imprisonment at discretion of court. Chap. 309, secs. 2, 3, p. 738.]

Robertson, Sumner, Trousdale. [Unlawful to buy, sell, or export from county quail, partridge, pheasant, grouse. Penalty $5–$25 or not exceeding 30 days, or both. Chap. 337, sec. 3, p. 780.]

Acts of 1901.

[Not seen.]

TEXAS.

General Laws of 1897, chap. 149, pp. 214–215.

Property of State: Sec. 1. * * * That all the wild deer, wild antelope, wild turkeys, wild ducks, wild geese and wild grouse, wild prairie chickens (pinnated grouse), wild Mongolian or English pheasants, wild quail or partridges, wild plover, snipe, and jacksnipe, found within the borders of this State, shall be, and the same are hereby, declared to be the property of the public.

Sale: Sec. 2. Whoever shall sell, or offer for sale, have in his possession for the purpose of sale, or whoever shall purchase or have in his possession after purchase, any wild deer or antelope killed in this State, or the carcass thereof, or the fresh hide thereof, or whoever shall sell or offer for sale, or have in his possession for the purpose of sale, or whoever shall purchase, or have in his possession after purchase, any of the game mentioned in section 1 of this act, killed or taken within this State, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined in any sum not less than ten nor more than one hundred dollars; *provided*, that the sale and purchase of the game mentioned in section 1 of this act shall not be unlawful when said sale or purchase is made in the county where such game was killed or taken; *provided*, that nothing herein contained shall be construed to prohibit the sale or shipment of wild ducks and wild geese.

Shipment: Sec. 7. It shall be unlawful for any express company, railroad company, or other common carrier, or the officers, agents, servants, or employees of the same, to receive for the purpose of transportation, or to transport, carry, or take beyond the limits of this State, or within this State, any animal, bird, or waterfowl mentioned in section 1 of this act; and it shall be unlawful for any person to transport, carry or take beyond the limits of this State any animal, bird, or fowl mentioned in section 1 of this act; and whoever shall violate the provisions hereof shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than twenty-five nor more than two hundred dollars; *provided*, that each shipment shall constitute a separate offense, and that such express company, railroad company, or other common carrier, or their agents, servants, or employees, shall have the privilege of examining any suspected package for the purpose of determining whether such package contains any of the articles mentioned in section 1 of this act; but this act shall not apply to the shipment or transportation of live Mongolian or English pheasants shipped for scientific or breeding purposes; *provided*, that nothing herein contained shall be construed to prohibit the sale or shipment of wild ducks and wild geese.

Evidence: SEC. 8. Possession at any season of the year during which the game birds and wild fowls of this State are protected by the laws hereof, shall be prima facie evidence of the guilt of the person in possession thereof.

Approved May 27, 1897.

UTAH.

Laws of 1899, chap. 26, p. 43.

Shipment: SEC. 26. * * * It shall be unlawful to ship or transport any quail out of the above-named counties [Kane and Washington] at any time except for the purpose of propagation, under the direction of the State and county fish and game wardens.

Penalties: SEC. 27. [Violation of any of the provisions of this act relating to game, a misdemeanor, punishable by a fine of not less than $10.]

Export: SEC. 29. It shall be unlawful for any person or persons at any time to ship or cause to be shipped, carried or transported out of the State any of the animals [deer, elk, mountain sheep, buffalo or bison, antelope,] birds, [quail, partridge, pheasant, prairie chicken, sage hen or grouse, mourning dove, snipe, duck, goose, brant, swan, English, Chinese, or Mongolian pheasant, pinnated grouse, introduced game birds] * * * or any part thereof mentioned in this act * * *

Approved March 9, 1899.

VERMONT.

Vermont Statutes, 1894, p. 828.

Killing for export: SEC. 4613. If a person at any time takes, kills, purchases, receives or causes to be taken, killed or received, a woodcock or ruffed grouse, commonly called partridge, for the purpose of shipping or in any manner disposing of the same to persons outside of this State for traffic or gain, he shall be fined ten dollars.

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Acts of 1896, No. 94, pp. 74–75.

Shipping deer: SEC. 4. Deer killed or taken in Vermont shall not be transported by any person or corporation, except that the carcass, or parts thereof, of one deer, lawfully killed in the State may be transported in the open season and for ten days thereafter when open to view, tagged and plainly labeled with the name of the owner thereof and accompanied by him; and the possession of deer or a part thereof by a common carrier or servant of a common carrier, unaccompanied by the owner, or not tagged and plainly labeled with his name, shall be a violation of the provisions of this section by such common carrier and servant. But this section shall not apply to the head, feet or pelt of deer severed from the body.

Penalty: SEC. 5. A person or corporation violating any of the provisions of this Act shall be fined one hundred dollars for each offense, one-half of the same to go to the complainant, the other half to the State.

Approved November 24, 1896.

Acts of 1896, No. 96, p. 76.

Sale, Birds: SEC. 1. No person or corporation shall kill, expose for sale, or have in possession at any time any game bird for which there is a close season in this State [quail, ruffed grouse or partridge, introduced pheasant, English partridge, plover, woodcock, English snipe, duck, goose] except for consumption as food within the State. But this shall not prevent a person residing out of the State from taking game birds in open season and three days thereafter out of the State when shipped open to view, tagged and plainly labeled with the name of the owner thereof and accompanied by him. Any person or corporation violating any of the provisions of this section, or any person who, not being the actual owner of such game birds, to aid another in such transportation falsely represents himself to be the owner thereof, shall be fined fifty dollars for each offense; and the delivery to or reception by any person or corporation within this State of any such game birds for shipment to a point without the State shall be prima facie evidence that the same were killed and are possessed within the State for a purpose other than that of being consumed as food within the State.

Approved, November 24, 1896.

VIRGINIA.

The general State game laws (Code of 1887, Chap. XCV, and Supplement to the Code, 1900, Chap. XCV) contain only provisions against sale of game in close seasons. The following abstracts of local laws are taken from the Acts of Assembly, 1888–1900, and are arranged alphabetically by counties.

Augusta: [Unlawful to kill or capture deer, partridge or quail, pheasant or ruffled grouse, wild turkey for purpose of shipping to any point outside of State. Penalty $5–$20 for each offense. Railroad, express, or other transportation company receiving for shipment any of above and shipping to any point outside State to be fined not less than $20 for each offense. Acts 1897–1898, chap. 683, secs. 4, 5.]

Floyd: [Unlawful to kill or capture partridges, pheasants, or wild turkeys at any time to be sold, shipped, or taken out of the county. Penalty $20–$100 or commitment to jail until fine and costs are paid. Acts 1893–1894, chap. 762, secs. 1, 2.]

Frederick: [Unlawful for nonresident of State at any time to offer for sale, or ship for purposes of sale partridge or quail, pheasant or ruffed grouse, wild turkey, woodcock. Penalty $20 or imprisonment 30 days. Acts 1889–1890, chap. 133, secs. 1, 2.]

[Unlawful to carry, send, transport, or ship, dead or alive, game or game birds of any kind to any point outside of county. Penalty $10 for first offense, double for each subsequent offense. Any stage-line, railroad or express company receiving such for shipment or transportation to be fined $50. Not applicable to shipment of rabbits or hares. Acts 1893–1894, chap. 344, sec. 5.]

Greenesville: [Unlawful to sell or offer for sale partridges (or quail) killed, captured, or obtained in this county. Penalty $2–$5 for first offense, $5–$10 for any subsequent offense. Acts 1899–1900, chap. 1073, secs. 6, 7.]

Henry: [Unlawful to export from county, partridges or quail, dead or alive. Penalty $10 or imprisonment 30 days. Acts 1897–1898, chap. 812, secs. 3, 4.]

Lee: [Unlawful without hunting license to ship or transport partridges (or quail) from county, or for licensee to ship partridges (or quail) not killed by himself. Penalty $10–$20. Acts 1899–1900, chap. 330, secs. 6, 7.]

Page: [Unlawful to kill, capture, offer for sale, or buy partridges (or quail) killed or captured in county for purpose of shipping beyond county limits. Penalty $5–$20 for each offense. Railroad, express or other transportation company receiving for shipment and shipping any partridge (or quail) killed or captured in county beyond county limits to be fined not less than $20 each offense. Acts 1895–1896, chap. 787, secs. 1, 2.]

Pittsylvania: [Unlawful at any time to ship partridges (dead or alive) to points outside the State, and any railroad or express company knowingly receiving such consignments to be fined not less than $50 for first offense and double for each subsequent offense. Not applicable to non-resident sportsmen who come for recreation and pleasure, who do not shoot for market, and who take away game as baggage on railroad lines on which they are traveling as passengers. Acts 1893–1894, chap. 424, sec. 2.]

Princess Anne: [Unlawful for nonresidents to shoot at or kill wild fowl for profit or sale, either directly or indirectly, unless they own or rent shores on Back Bay. Penalty $50–$100, or 30–90 days, or both. Acts 1893–1894, chap. 86, secs. 4, 5.]

Rockingham: [Unlawful to kill or capture for purpose of shipping to any point outside of State, any deer, partridge or quail, pheasant or ruffed grouse, or wild turkey. Penalty $5–$20. Railroad or express company, or other transportation company receiving above for shipment or shipping same to any point outside of State to be fined $20 or more for each offense. Acts 1893–1894, chap. 610, secs. 4, 5.]

Shenandoah: [Unlawful to carry, send, transport or ship, dead or alive, game or game birds of any kind to any point outside the county. Penalty $10 for first offense; double for each subsequent offense. Any stage line or railroad or express company receiving game for shipment or transportation, to be fined $50. Not applicable to shipment or transportations of rabbits or hares. Acts 1895–1896, chap. 790, sec. 7.]

[Unlawful for nonresident of State at any time to offer for sale, or ship for purposes of sale, partridge or quail, pheasant or ruffed grouse, wild turkey, woodcock. Penalty $20 or imprisonment 30 days. Acts 1889–1890, chap. 133, secs. 1, 2.]

Sussex: [Unlawful to sell or offer for sale partridges or quail killed, captured, or obtained in the county. Penalty $2–$5 for first offense, $5–$10 for any subsequent offense. Acts 1899–1900, chap. 1073, secs. 6, 7.]

WASHINGTON.

Session Laws of 1897, Chap. LII, pp. 84–86.

Sale: Sec. 12 [as amended by Laws of 1899, Chap. CXXXVIII, sec. 3]. Every person who shall offer for sale or market, or sell or barter any moose, elk, caribou, killed in this State, antelope, mountain sheep or goat, deer, or the hide or skin of any moose, elk, deer or caribou, or any grouse, pheasant, ptarmigan, partridge, sage hen, prairie chicken or quail at any time of the year, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided.

Sec. 13 [as amended by Laws of 1899, Chap. CXXXVIII, sec. 4]. Every person, agent or employe of a company or corporation, hotel-keeper, restaurant keeper, boarding house keeper, or keeper of a market, or other person who shall buy or barter for, at any time of the year, the whole or any part of the meat of any moose, elk, caribou, antelope, mountain sheep or goat, deer, or the hide or skin of any moose, elk, deer or caribou, or any grouse, pheasant, ptarmigan, partridge, sage hen, prairie chicken or quail, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as hereinafter provided.

Penalties: Sec. 18. Every person convicted of any of the misdemeanors defined in the foregoing sections of this act, shall be punished by a fine of not less than ten dollars ($10) nor more than one hundred ($100) dollars, together with the costs of the prosecution in such action, and in default of the payment of said fine, shall be imprisoned in the county jail one day for each two dollars ($2) of such fine; and upon the trial of any person, agent or employe of a company or corporation, proof of the possession of the wild animals, birds, or song birds, when it is unlawful to take, kill or have same, shall be *prima facie* evidence that the said wild game animal, game bird, or song bird, was unlawfully taken or killed by the person having possession of same.

Approved, March 11, 1897.

Session Laws of 1901, Chap. CXXXIV, pp. 280-281.

Export: Sec. 5. That [section] 7358 of Ballinger's Annotated Codes and Statutes of Washington be and the same is hereby amended to read as follows: Section 7358. Every steamboat company, railroad company, express company, or other common carrier, their officers, agents and servants and every other person who shall transfer, carry or take out of this State, or who shall receive for the purpose of transferring from this State any of the wild game birds or animals enumerated in this act [moose, elk, caribou, antelope, mountain sheep, mountain goat, deer, grouse, partridge, prairie chicken, sage hen, native pheasant, ptarmigan, swan, sand-hill crane, rail, plover, any game duck or other game water fowl], shall be guilty of a misdemeanor and upon conviction thereof shall be punished as hereinafter provided: *Provided, however,* That upon the granting of a similar privilege by the Legislature of the State of Oregon[1] or Idaho to the citizens or residents of the State of Washington, nothing in this section shall be construed to prevent any citizen or resident of the State of Oregon or Idaho from personally taking with him any game to the limit of one day's hunt, killed by himself, in the State of Washington, when it is lawful to take and kill the same; but this provision shall be strictly construed, and the burden of the proof shall be upon the person taking with him such game to establish the fact that the same was personally killed by himself: *Provided,* that nothing in this section shall be construed to prevent any steamboat company, express company, railroad company, or other common carrier, their officers, agents and servants, from receiving any of the game birds or animals enumerated in this act from transferring them from one point to another point within this State when said game birds or animals are accompanied by the affidavit of the shipper that the same is not shipped for sale or profit.

Approved March 18, 1901.

WEST VIRGINIA.

Acts of 1899, chap. 22, p. 89.

Export: [Sec.] 1. * * * No person, firm or corporation shall at any time kill or have in possession any deer, wild turkey, quail, pheasant or ruffed grouse, or any part of the same, with the intention of sending or transporting the same or having the same sent or transported beyond the limits of this State.

Any person violating this section shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than twenty dollars nor more than fifty dollars, and may, at the discretion of the court or justice trying the case, be confined in jail not more than ten days.

* * * the reception by any person within this State of any deer, wild turkey, quail, pheasant, or ruffed grouse for shipment to a point without the State shall be

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[1] Same privilege granted in Oregon. See p. —.

prima facie evidence that the said deer, wild turkey, pheasant, or ruffed grouse, were killed within this State for the purpose of carrying the same beyond its limits.

Approved February 22, 1899.

WISCONSIN.

Wisconsin Statutes, 1898, Vol. I, chap. 62, pp. 1113–1114.

Shipment: Sec. 1498*m* [as amended 1901]. Any person or corporation, or any agent or servant of the latter, who shall, for compensation or otherwise, * * * transport any of the animals, fowl or birds for which a close season is prescribed by law, during such season, or ship, carry or transport, offer or receive for shipment or transportation to any place beyond this State any feathered game protected by these statutes except live birds and also fifty birds or fowl of any variety when the same are accompanied by and in the possession of the owner thereof * * * or ship, transport or carry out of this State to sell or offer for sale any duck of any variety or any snipe or plover between the first day of December and the next succeeding first day of September, shall forfeit not less than twenty-five dollars nor more than one hundred dollars for each such violation, to be recovered in a civil action brought in the name of the State by the State fish and game warden or one of his deputies. The possession of any such animals, fowl or birds during the close season therefor, for shipment or in transit, shall be *prima facie* evidence of the violation of this section. * * * It shall be the duty of every person whenever any animal, fish or game of any of the kinds the taking, catching or killing of which is prohibited by law at any or all times (except during the periods in which the same may be lawfully taken, caught or killed) is offered to him for transportation out of this State to at once notify and give full particulars concerning such offer and by whom made, to the State fish and game warden or one of his deputies. All sections of these statutes relating to having in possession or under control, or the sale, shipment or transportation of any animal, fish, water-fowl or bird, shall be construed to include any and all parts of the flesh and meat thereof.

Laws of 1899, chap. 312, pp. 565–577.

Nonresident license coupons: [Sec. 11 (amending section 1498*q*, Wisconsin statutes of 1898). Each license for hunting game shall state for what year the same is granted, and shall be valid for no other period than that which the law shall designate to be the open season for the game permitted to be hunted, taken, or killed by the terms of such license, subject to the proviso that all kinds of game can be hunted by a person holding a license for the hunting of deer. * * * Each license for the hunting of deer issued to a nonresident of the State shall be provided with two coupons. Each coupon shall be divided into three sections, lettered "A," "B," and "C," respectively. The holder of a nonresident license shall be entitled to have transported within or without the State one carcass of a deer or part of a carcass of a deer on each of the two coupons attached to his license. The agent receiving the carcass for transportation shall detach section "A" of the coupon and forward said section to the State fish and game warden. Sections "B" and "C" are to be attached to the carcass of deer received for transportation, and all three sections of the coupon must be canceled by said receiving agent, with the date of reception for shipment and his initials written or stamped plainly thereon. While in transit within the State sections "B" and "C" of the coupon must be on the carcass, or said carcass shall be subject to seizure as contraband game. If the place of delivery is within the State of Wisconsin, the delivering agent shall, before delivery to consignee, detach section "C" and forward said section to the State fish and game warden, leaving section "B" attached to the carcass. Agents or employes of transportation companies must transmit sections of coupons within two days of the date of shipment or delivery, respectively. If the carcass of a deer be consigned to a point without the State of Wisconsin, the agent, servant, or employe of the transportation company in charge of said carcass while in transit within the State, shall detach section "C" of the coupon and deliver the same to the agent of the transportation company at the last station or place in the State where the train or other conveyance of said company shall stop. And it shall be the duty of said agent to whom said section of the coupon is delivered to immediately forward the same to the State fish and game warden, after writing or stamping thereon the name of the station or place and date of receipt thereat of said section of said coupon. Any agent, servant, or employe of any transportation company, or common carrier, who shall receive for shipment or transport any carcass of deer without having the coupons, or sections of coupons, attached thereto, or who shall refuse or neglect to detach the sections of the coupons as herein provided, or shall fail to transmit them to the State fish and game warden as herein provided, shall be punished by a fine of twenty-five to one hundred dollars, or by imprisonment of thirty days to ninety days, or by both such fine and imprisonment. No transportation company, or common carrier, shall receive for transportation or transport any carcass of deer unless the same shall be received, carried, and delivered pursuant to the provisions of this section relative to coupons, and shall only be received, carried, or delivered during the open season for transportation of carcasses of deer.]

Resident license coupons: SEC. 13. Section 1498*s*, Wisconsin statutes of 1898, is hereby amended so as to read as follows: Section 1498*s*. Every person who has resided in this State for one year previous to applying for a license to hunt game and who desires to hunt the same must first obtain a license from the county clerk of the county in which he resides, * * * The license so issued to any resident of this State shall have attached two coupons for the shipment of deer. Each coupon shall be divided into two sections lettered "A" and "B" respectively. The holder of a resident coupon license shall be entitled to offer for transportation or have transported within the State by a common carrier of this State one carcass of a deer or part of carcass of deer on each of the two coupons attached to his license. The agent receiving the carcass or part of carcass for transportation shall detach section "A" of the coupon on which the same is to be transported and forward said section to the State fish and game warden. Section "B" is to be attached to the carcass or part of carcass of deer received for transportation and the two sections of the coupon must be canceled by said receiving agent, with the date of reception for shipment and his initials written or stamped planly [sic] thereon. While in transit, section "B" of the coupon must be on the said carcass or part of carcass of deer or the said carcass or part of carcass of deer shall be subject to seizure as contraband game. The receiving agent or employe of transportation companies or common carriers are required to transmit to the State fish and game warden section "A" of the coupon as herein required, must so transmit the same within two days of the date of shipment. Any agent, servant or employe of any transportation company or common carrier who shall receive for shipment or transport any carcass of deer or part of carcass of deer without having the coupon attached thereto as herein provided, or who shall refuse or neglect to detach section "A" of the coupon as herein provided, or who shall fail to transmit or forward to the State fish and game warden as herein provided the section by him detached, shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars or by imprisonment in the county jail not less than thirty days nor more than three months, or by both such fine and imprisonment, in the discretion of the court. No transportation company or common carrier shall receive for transportation, or transport or attempt to transport any carcass of deer or part of a carcass of deer unless the same shall be received for transportation, carried and delivered pursuant to the provisions of this section relative to the coupons and parts of coupons, and shall only be received for shipment, carried or delivered during the season or time which the laws of the State shall fix as the open season for the transportation of carcasses of deer or parts of carcasses of deer.

Shipping limit: Sec. 17. It is unlawful and is prohibited for any person holding a non-resident license as herein described to take out of the State more than fifty birds, fowls or animals, protected by the laws of this State, in any one year. *Provided,* that this section shall be construed to mean that when fifty birds, fowls or animals of any kind or variety have been taken from the State by holder of a non-resident license further right to take any kind of birds, fowls or animals by the holder of the said license shall cease. No transportation company or common carrier shall receive for transportation or shipment out of the State any birds, fowls or animals protected by the laws of the State, except when the same shall be in the personal possession of, or carried as baggage or express by the owner thereof, and such owner shall have in his possession at the time of such taking out of the State a non-resident license duly issued to him under the provisions of law, and shall accompany the said birds, fowls or animals on the same train or other conveyance of the common carrier beyond the borders of the State. Any person who shall violate any of the provisions of this section shall be punished by a fine of not less than fifty nor more than two hundred dollars, or by imprisonment in the county jail not less than sixty days nor more than six months, or by both such fine and imprisonment in the discretion of the court.

Shipment: Sec. 18 [as amended 1901]. It is unlawful and is prohibited for any person a resident of this State to ship within this State any birds, fowls or animals, protected by the laws of this State, except when the same shall be in the personal possession of or carried as baggage or express by the owner thereof, and such owner shall have in his possession a resident license duly issued to him under the provision of law, and shall accompany the said birds, fowls or animals on the same train or other conveyance; provided, that there shall be only one shipment each day by any one person and that the number of birds or animals carried at any one shipment shall not exceed twenty-five altogether, and also provided that this section shall not apply to any game except woodcock, partridge, pheasant, prairie chicken or prairie hen, grouse of any variety, plover of any variety, and also provided that the number of snipe of any variety and acquatic [sic] fowl that may be transported under this section shall not exceed fifty. All game shipped or had in possession in violation of this act may be seized, confiscated and sold by any warden as provided by law. Any person who shall violate any of the provisions of this section shall be punished by a fine of not less than fifty dollars nor more than one hundred dollars, or by imprisonment in the county jail not less than sixty days nor more than six months or by both such fine and imprisonment in the discretion of the court.

Marking packages: Sec. 19 [as amended 1901]. It is hereby required that any and all packages containing fish or game shall be labeled in plain letters on the address side of the package, so as to disclose the number of pounds of each kind of fish and the number of each variety of game, animals or birds contained therein. Any person who shall deliver to a common carrier for transportation any package or parcel containing fish or game, which said package or parcel shall not be so labeled as herein required, or who shall place upon said package or parcel a false statement as to the contents thereof, shall be punished by a fine of not less than twenty-five dollars nor more than one hundred dollars, or by imprisonment in the county jail not less than thirty days, nor more than ninety days, or by both fine and imprisonment. Any shipment made or had in possession in violation of this law may be seized, confiscated and sold by any warden as provided by law.

Sec. 20 [as amended 1901]. Every person delivering to a common carrier a package or parcel containing fish or game, shall place upon said package the name and address of the shipper and the name and address of the person to whom shipped.

Any person violating the provisions of this section shall upon conviction thereof, be punished by a fine of not less than ten dollars nor more than fifty dollars. Any shipment made or had in possession in violation of this law may be seized, confiscated and sold by any warden as provided by law.

Unmarked packages: Sec. 21. It shall be unlawful, and is hereby prohibited, for any common carrier or agent, servant or employee of a common carrier, to receive for transportation or transport any package or parcel containing fish or game, unless the same shall be labeled as provided in sections 19 and 20 of this act. Any person, firm, or corporation violating the provisions of this section shall be required to forfeit to the State of Wisconsin a sum not less than twenty-five dollars nor more than one hundred dollars, in the discretion of the court.

Examination: Sec. 22. It shall be within the power of every officer charged with the enforcement of laws protecting fish and game to examine and open any package in the possession of a transportation company, which said package he shall suspect or have reason to believe contains contraband fish or game. It is hereby made the duty of every common carrier, agent, servant or employe thereof, to permit any officer charged with the enforcement of laws for the protection of fish and game to examine and open any package or parcel in the possession of said common carrier, or agent, servant or employe thereof, which the said officer so charged with the enforcement of said laws shall suspect or have reason to believe contains fish or game protected by the laws of the State, and not entitled under such law to be transported, or when the said officer shall suspect or have reason to believe that the said package or parcel is falsely labeled. Any person, firm or corporation refusing to an officer charged with the enforcement of the fish and game laws permission to examine or open any such package or parcel or shall in any manner hinder or impede such action by the said officer, shall forfeit to the State of Wisconsin a sum not less than fifty dollars nor more than one hundred and fifty dollars, in the discretion of the court.

Sec. 23. It shall be unlawful and is hereby prohibited for any person, firm or corporation acting as common carrier to bring into this State any fish or game from any State during the time that such other State prohibits the transportation of such fish or game from said State to a point without the same. Any person, firm or corporation violating the provisions of this section shall be required to forfeit to the State the sum of not less than twenty-five dollars nor more than one hundred dollars in the discretion of the court.

Property of State: Sec. 26. Section 4560, Wisconsin statutes of 1898 is hereby amended to read as follows: The ownership of and the title to all fish and game in the state of Wisconsin is hereby declared to be in the state, and no fish or game shall be caught, taken or killed in any manner at any time, or had in possession except the person so catching, taking, killing or having in possession shall consent that the title to said fish and game shall be and remain in the state of Wisconsin for the purpose of regulating and controlling the use and disposition of the same after such catching, taking or killing. The catching, taking, killing or having in possession of fish or game at any time, or in any manner, or by any person, shall be deemed a consent of said person that the title of the state shall be and remain in the state for said purpose of regulating the use and disposition of the same, and said possession shall be consent to such title in the state whether said fish or game were taken within or without this state.

Game in transit: Sec. 28. It shall be unlawful and is prohibited for any person, firm or corporation or common carrier to ship into, or through this State from any other State any fish or game prohibited by the laws of said State to be shipped or transported and it shall be the duty of the State fish and game warden of this State or his deputy, to seize, hold, and dispose of, according to the laws of this State, any fish or game brought into or shipped into this State, or carried through, or attempted to be carried through this State, prohibited to be so shipped or transported by the laws of any other State, and further to dispose of the same according to the laws of this State. Any person, firm or corporation violating the provisions of this act shall be required, upon due proof thereof, to forfeit a sum not less than twenty-five dollars nor more than one hundred dollars, in the discretion of the court.

Approved May 2, 1899.

Laws of 1901, chap. 156.

Game birds defined: Sec. 1. * * * For the purposes of this act the following only shall be considered game birds: The several species of wild geese, ducks, wood cock, snipe, plover, grouse, prairie chickens, pheasant, partridge and quail, designated by name and protected by the game laws of this state.

Approved April 9, 1901; published April 12, 1901.

Laws of 1901, chap. —.

[Note: Sec. 13 is incorporated above in chap. 312, 1899, sec. 18; sec. 16 in sec. 19; sec. 17 in sec. 20; and sec. 21 in Wis. Stats. sec. 1498 m.]

Sale seasons: Sec. 14. Section 14, chapter 311, laws of 1899, is hereby amended so as to read as follows: Section 14, chapter 311 of the laws of 1899. It shall be unlawful and is prohibited to buy, sell or transport any green hide, green head, carcass or part of a carcass of any buck, deer, doe or fawn between the fifth day of December and the succeeding fifteenth day of November. Provided that this section shall not prohibit the shipment into this state at any time [of] the hides or skins of deer from another state if the same be lawfully taken and had in possession in the state from which such shipment is made. Any shipment made or had in possession in violation of this law may be seized confiscated and sold by and [any] warden as provided by law. Any person or corporation who shall violate any of the provisions of this act shall be punished by a fine of not less than twenty-five dollars nor more than fifty dollars and by imprisonment until said fine is paid, not exceeding sixty days.

Permits: Sec. 26. Section 1498i of the statutes of 1898 is hereby amended so as to read as follows: Section 1498i. The state fish and game warden may on satisfactory testimonials, issue to any person a resident of this state, a permit to take any of the nests, eggs, birds, fowls, fish or animals of the state under conditions and restrictions fixed by said warden.

Tagging deer: Sec. 28. Whenever any resident of this state holding a hunting license, shall kill a deer during the open season he shall immediately attach to the carcass of said deer section B of one of the coupons of his license. Whenever a non-resident of this state holding a hunting license for the hunting of all kinds of protected game of this state shall kill a deer during the open season he shall immediately attach to the carcass of said deer sections B and C of one of the coupons of his license. Any person, company or corporation, before receiving for shipment, any carcass or part of a carcass of any deer, shall detach from the license of the shipper section A, of one of the coupons of said license and compare the same with the coupon or coupons attached to said carcass or part of a carcass and if they correspond the carcass or part of a carcass may be shipped provided the said carcass or part of a carcass of deer be accompanied by the shipper from the place of shipment to destination if within the state and to state line if destination be to a point without the state. Any carcass or part of a carcass of any deer had in possession in or near any hunting camp or found in transit or in any place for sale or storage, without the section of the hunting license coupon mentioned attached, may be seized, confiscated and sold by any warden as provided by law. Any resident who shall neglect or refuse to comply with the provisions of this act, or any non-resident who shall neglect or refuse to comply with the provisions of this act, or any person or agent of any person, company or corporation who shall receive for shipment or ship any carcass or part of a carcass of any deer in violation of this act shall on conviction thereof pay a fine of not less than ten dollars nor more than fifty dollars or [shall be punished] by imprisonment in the county jail not less than twenty days nor more than three months.

WYOMING.

Revised Statutes, 1899, pp. 602–604.

Certificate: Sec. 2112. Every person who may wish to transport beyond the limits of this State any carcasses, heads, antlers, scalps or skins of any animals killed in accordance with the provisions of this chapter, shall first procure from a justice of the peace of this State a certificate stating that said carcasses, heads, antlers, scalps or skins were taken from animals which were killed in season and according to law. * * * [Penalty, $25–$100, or imprisonment 10–90 days, or both.]

Sale, Shipment: Sec. 2117. It shall be unlawful at any time to capture, or pursue for the purpose of capturing, any of the wild animals mentioned in section 2107 [deer, elk, moose, antelope, mountain sheep, mountain goat], of whatever age, for the purpose of selling or disposing of the same, or for shipping the same out of the State; *Provided,* It shall be lawful to sell any colin or quail for the purpose of breeding, or to take the same alive, for preservation through the winter. It shall also be lawful for any person to take alive on his own premises, at any time and in any manner, any of the animals hereinbefore mentioned for the sole purpose of domesticating, or for scientific or breeding purposes. Any person violating any of the provisions of this section shall be punished by a fine of not less than one hundred dollars for each wild animal so captured or shipped.

Export of buffalo: Sec. 2119. It shall be unlawful for any person to kill, chase, pursue or catch any buffalo of any age at any season of the year in the State of Wyoming, or to drive or in any manner remove or transport any buffalo out of the State of Wyoming. Any person or persons who shall violate the provisions of this section shall be guilty of a felony, and upon conviction thereof shall be punished by imprisonment in the State penitentiary for not less than three nor more than ten years; *Provided,* That this section shall not apply to tame or domesticated buffalo.

Hides: Sec. 2120. It shall be unlawful for any person or persons to purchase, or obtain by barter any green, tanned or untanned hide or hides or horns of any animals mentioned in section two thousand one hundred and seven. Any person violating the provisions of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than twenty, nor more than one hundred dollars, or imprisoned in the county jail for a period of thirty days, or by both.

Shipping carcasses, etc.: Sec. 2121. It shall be unlawful for any railway, express company, stage line or other public carrier, or any of their agents or employees, or other person or persons, to receive or have in their possession for transportation any carcass, or part of carcass, hides, tanned or untanned, or horns of any of the animals mentioned in this chapter, except as otherwise provided by law. Except that nothing in this chapter shall prevent shipping or transporting in any manner mounted heads or stuffed birds or animals to any point in or out of the State; *Provided,* that such birds or animals were not killed in violation of this chapter, or that heads or horns were not taken from animals killed in violation of this chapter. Any person or persons or corporation knowingly transporting game or fish for market within or out of the State, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in the sum of not less than one hundred dollars nor more than five hundred dollars for each consignment from one consignor to one consignee; *Provided*, That none of the provisions of this section shall apply to game or fish in transit into or through this State from other States and Territories.

Approved February 15, 1899.

Session Laws of 1901, chap. 37, p. 36.

Game birds defined: SEC. 1. * * * For the purposes of this act the following only shall be considered game birds: The Anatidae, commonly known as swans, geese, brant and river and lake ducks; the Rallidae, commonly known as rails, coots and mud-hens; the Limicolae, commonly known as shore-birds, plovers, snipe, sandpipers, tatlers, willets, curlews, godwist [godwits] and avocets; the Gallinaw [Gallinæ], commonly known as grouse, prairie chickens, pheasants, sagehens, partridges and quails.

Approved February 14, 1901.

CANADIAN EXPORT LAWS.

Extract from the Customs Tariff.

Export: [Sec.] 8. The export of deer, wild turkeys, quail, partridge, prairie fowl and woodcock, in the carcase or parts thereof, is hereby declared unlawful and prohibited; and any person exporting or attempting to export any such article shall for each such offense incur a penalty of one hundred dollars, and the article so attempted to be exported shall be forfeited, and may, on reasonable cause of suspicion of intention to export, be seized by any officer of the customs, and, if such intention is proved, shall be dealt with as for breach of the Customs laws: Provided, that this section shall not apply to the export, under such regulations as are made by the Governor in Council, of any carcase or part thereof of any deer raised or bred by any person, company or association of persons upon his or their own lands.

The Governor in Council is further authorized to regulate "the number of deer and parts thereof which may be exported in any year, when shot, under Provincial or Territorial authority in Canada, by any person not domiciled in Canada for sport, and for limiting the ports at which such deer may be exported, and for prescribing the conditions under which such exportation may be permitted: Provided, that deer in the carcase or parts thereof may be exported as prescribed by such regulations notwithstanding anything to the contrary in any Act of the Parliament of Canada."

[No prohibition against export of live game in the customs laws.]

Regulations respecting export of 'Home-bred Deer.' Order in Council No. 1064 B, August 17, 1899.

Domesticated Deer: Any person who wishes to export any carcass or parts thereof of deer raised or bred upon his own land, or upon lands owned by a Company or Association of persons of which he is a member, shall make affidavit upon the face of the export entry to the effect that the deer, the carcass or parts whereof is so entered for exportation, was raised or bred upon his own lands or upon lands owned or held by a company or association of persons of which he is a member (describing the location of such lands, and naming the association or company holding the same).

Regulations respecting export of deer shot for sport. Customs Dept. Mem. No. 1063 B, August 18, 1899.

The following Regulations respecting the Export of Deer, shot for sport by persons not domiciled in Canada, have been made and established, viz.:—

1. Deer when shot for sport under Provincial or Territorial Authority in Canada, by any person not domiciled in Canada may be exported under the following conditions and limitations:—

Ports: 1. The deer may be exported only at the Customs Ports of Halifax, Yarmouth, Macadam Junction, Quebec, Montreal, Ottawa, Kingston, Niagara Falls, Fort Erie, Windsor, Sault Ste. Marie, Port Arthur, and such other Ports as shall from time to time by the Minister of Customs be designated for the export of deer.

Seasons: 2. The exportation of deer in the carcase or parts thereof (except as to cured deer heads and hides of deer) shall be permitted only during or within fifteen days after the "open season" allowed for shooting deer under the laws of the Province or Territory where the deer to be exported has been shot.

Number: 3. No person shall in one year export more than the whole or parts of two deer, nor shall exportation of such deer be made by the same person on more than two occasions during one calendar year.

Prohibitions: 4. Deer in the carcase or any part thereof which has been killed in contravention of any Provincial or Territorial law shall not be exported, nor shall any deer in the carcase or parts thereof be exported without the permit of the Collector of Customs accompanying the shipment.

Nonresident: 5. A person, not domiciled in Canada, who has shot deer for sport and not for gain or hire, under Provincial or Territorial Authority may make an export entry in duplicate of deer in the carcase or parts thereof so shot by him and allowed to be exported—upon subscribing and attesting before a Collector of Customs a Declaration in the following form to be annexed to said export entry, viz.:—

* * * * * * *

Permit: 6. The Exporter shall produce his license or permit for shooting deer under Provincial or Territorial Authority to the Collector of Customs before the exportation of the deer and the Collector shall indorse thereon a description of the quantity and parts entered for exportation.

The Collector of Customs at any Customs Port of Entry designated for the Export of Deer, upon receiving the said export entries duly completed, may thereupon under the seal of the Custom House, issue his permit for the exportation of the deer, if satisfied as to the identity of the sportsman and that the exportation is not prohibited.

PROVINCIAL LAWS.

BRITISH COLUMBIA.

Statutes of 1898, 61 Vic., chap. 24, pp. 123–125.

Game birds defined: [Sec.] 2. * * * The expression "game bird," wherever the same occurs in this Act, shall mean a bird protected by the provisions of this Act. [Birds living on noxious insects, bittern, blackbird (English), chaffinch, duck, grouse (including prairie chicken), gull, heron, linnet, meadowlark, partridge (English), pheasant, plover, quail, robin, skylark, thrush.]

Export: [Sec.] 4. No person shall at any time purchase or have in possession, with intent to export, or cause to be exported or carried out of the limits of this Province, or shall at any time or in any manner export, or cause to be exported or carried out of the limits of this Province, any or any portion of the animals or birds mentioned in this Act [deer, elk, moose, caribou, mountain sheep, mountain goat, hare, quail, partridge, grouse, pheasant, duck and certain nongame birds enumerated in section 2], in their raw state; and this provision shall apply to railway, steamship and express companies. In determining the question of intent of any party charged under this section, any competent proof that the accused has within one year exported, or caused to be exported or carried beyond the limits of this Province, any bird or animal covered by this section, or any part of such bird or animal, shall be received as prima facie evidence of the existence of such unlawful intent charged in the complaint or information: Provided that it shall be lawful for any person having a licence under section 15 of this Act to export, or cause to be exported or carried out of the Province, the heads, horns and skins of such animals mentioned in section 9, subsection (*d*), of this Act, as have been legally killed by such licence-holder: Provided that the provisions of this section shall not apply to bear or beaver, marten or land otter.

Sale: [Sec.] 9. It shall be unlawful for any person at any time—

(*b*) To buy or sell the heads of mountain sheep:

(*d*) To expose for sale any deer without its head on, or any game bird without its plumage.

Specimens: [Sec.] 12. The provisions of this Act shall not apply * * * to the Curator of the Provincial Museum, or his assistant, assistants, or agent (appointed by him in writing), while collecting specimens of natural history for the Provincial Museum. * * *

Sale seasons: [Sec.] 13. No person shall buy or sell, or have in his or her possession, any of the said animals or birds, or any part or portion of any such animals or birds, during the period in which they are so protected: Provided always, that if lawfully killed and obtained, they may be exposed for sale for five days, and no longer, immediately after the commencement of such periods of protection. * * *

Penalties: [Sec.] 18. * * * Any person offending against any other provisions [than secs. 8 and 14] of this Act or of any regulations under it shall be liable for each offence, on conviction thereof in a summary manner as aforesaid, to a fine of not more than one hundred dollars, with costs, to be levied by distress, or to imprisonment for any time not exceeding thirty days, or to both fine and imprisonment.

May 20, 1898.

MANITOBA.

Statutes of 1900, 63–64 Vic., cap. 14, pp. 76–78.

Sale: [SEC.] 15. No person, either on his own behalf or on behalf of any other person or persons, shall sell, purchase or offer or expose for sale, barter or exchange any of the animals mentioned in section 3 [deer, cabri or antelope, elk or wapiti, moose, reindeer or cariboo], other than the heads and hides of such animals, nor any of the birds mentioned in sub-section (*a*) and (*b*) of section 6 [grouse, prairie chicken, pheasant or partridge, plover, quail, woodcock, snipe, sandpiper].

Export: [SEC.] 17. No person or corporation shall at any time or in any manner export or cause to be exported or carried out of the limits of this Province any of the animals or birds mentioned in this Act, excepting on a special permit from the Minister of Agriculture and Immigration, and then only in case of live animals or birds for the purpose of domestication, and mounted heads and dressed skins, and not in any one case to exceed two in number of each kind. This provision shall apply to railways, express companies and other common carriers.

Penalty: [SEC.] 24. Any person offending against any of the provisions of sections * * * [15 and 17] of this Act shall be liable for each offence to a fine not exceeding $100 and not less than $10, together with costs of prosecution; * * *

Assented to May 21, 1900.

NEW BRUNSWICK.

Acts of 1899, 62° Vic., Cap. VIII, pp. 67–88.

Game defined: [SEC.] 2. (*b*) The expression "game" includes any animal or bird mentioned in this Act, or of a species or class similar thereto. [Moose, caribou, deer, mink, fisher, sable, muskrat, beaver; partridge, goose, brant, teal, wood duck, dusky or black duck, snipe, woodcock, sea gull, pheasant, and 'any small birds which frequent the fields and woods' (except blackbirds, crows and English sparrows.)]

False representation: [SEC.] 4. Everyone is guilty of an offence and liable to the penalty hereinafter provided who at any time or season hereafter, in any part of the Province:

(*e*) Not being the actual owner of the property in Section 5, sub-Section (*a*) described, falsely and willfully represents himself as such, for the purpose of effecting the transportation thereof. [Penalty, fine $20–$50, or imprisonment 20 days to 2 months.]

Shipment: [SEC.] 5. Every corporation, railway, express company, or other common carrier, or person acting as a common carrier, shall be guilty of an offence and liable to the penalty hereinafter provided, who, at any time or season hereafter in any part of the Province:

(*a*) Carries or transports from place to place any live moose, caribou or deer, or the carcass or any portion thereof, or the green hide of such game unless the same be accompanied by the owner thereof, and be open to view and tagged or labelled with the owner's name and address: [Penalty, fine $50–$100.]

(*b*) Carries or transports without the Province any live game or the carcass or any portion thereof, or the green hide or pelt of any game. Nothing herein shall apply to game transported or exported on the special permit of the Surveyor General under the provisions of Section 44, or to the transportation of heads or hides of moose, caribou or deer, shipped or delivered to any *bona fide* taxidermist within the Province. [Penalty, fine $50–$100.]

Sale: [SEC.] 7. Notwithstanding anything in this Act contained it shall be lawful to

(*b*) Buy, sell, offer or expose for sale

I. Any wild goose or brant between the end of the close season for killing such game, in any year, and the first day of March then next following:

II. Any partridge within the County of Northumberland, provided that such partridge be killed in open season within such County and be not exported therefrom.

Licenses: [SEC.] 44. The Surveyor General may issue licenses not inconsistent with any law of the Dominion of Canada, authorizing the exportation from the Province, or the transportation within the Province of any game, whether alive or dead, and the Surveyor General may also issue licenses permitting the taking or killing of any game within the Province for preservation as specimens of natural history, or for scientific investigation.

[SEC.] 45. No license or permit issued under the provisions of this Act shall be valid unless signed by the Surveyor General and countersigned by the chief game commissioner or warden who may have issued the same.

Acts of 1900, 63° Vic., Cap. XXXIX, pp. 207–210.

Sale, Partridge: [SEC.] 1. Everyone is guilty of an offence and liable to the penalty hereinafter provided who * * * buys or sells or offers or exposes for sale * * * any partridge between the date of the passage of this act and the fifteenth day of September A. D. 1903. [Penalty, fine $10–$20 or imprisonment 10–20 days.]

Export of partridges: [SEC.] 13. (1) No person, under a penalty of not less than ten dollars or more than twenty-five dollars for each offence shall hunt, take or kill any partridge or partridges for the purpose of exporting the same, or export or attempt to export the same out of New Brunswick, and in all cases the onus of proving that any such partridge or partridges so hunted, taken or killed, is, or are not intended to be exported as aforesaid shall be upon the person hunting, taking or killing the same, or in whose possession or custody the same may be found, and the partridge or partridges so attempted to be exported shall be forfeited, and may, on reasonable cause of suspicion of intention to export, be seized by any Game Warden or other person for such purpose appointed and authorized by the Surveyor General.

* * * * * * *

(3) Upon proof having been made that any person or persons have exported or attempted to export any partridge or partridges in violation of sub-section (1) of this section, it shall be presumed that the same were killed within the Province until the contrary is shown beyond any reasonable doubt.

Passed April 12, 1900.

NEWFOUNDLAND.

Consolidated Statutes, second series, 1892, cap. 144, p. 980.

Sale of ptarmigan: [SEC.] 1. No person shall hunt, kill, wound, take, sell, bartar, purchase, receive, give away, or have in his possession, any ptarmigan or willow grouse (commonly called partridge), or any other kind of grouse or partridge, or the eggs of any such birds within this colony between the twelfth day of January and the fifteenth day of September in any year, under a penalty of not exceeding one hundred dollars, or, in default of payment, of imprisonment not exceeding three months: * * * *Provided further*, That any person who shall actually have in his possession at or upon the twelfth day of January aforesaid, any ptarmigan or willow grouse shall be allowed to offer for sale such ptarmigan or willow grouse until the twenty-second day of January in each year.

Sale of hares: [Sec.] 3. No person shall hunt, take, kill, wound, sell, barter, receive, purchase, or give away, any wild rabbit or hare, within this colony and its dependencies, from the first day of March until the fifteenth day of September in any year, under a penalty of twenty-five dollars, and, in default of payment, to be imprisoned for a period not exceeding one calendar month: * * * Provided also, that with the permission of a Magistrate such rabbit or hare may be taken alive at any time and in any district for the purpose of propagating the species.

Acts of 1899, 62 and 63 Vic., cap. 18, pp. 222–225.

Export: [Sec.] 16. Save as excepted by this Act no person shall export the carcase or skin or any part thereof of any caribou, nor shall the owner, master, officers or crew of any vessel permit the exportation therein of the carcase or skin or any part thereof of any caribou, except by a licensee, and under a permit of a Customs' Officer.

Export under license: [Sec.] 17. (*a*) A person holding a license under this Act may export a carcase and antlers, skin or any part of any caribou killed under the said license, upon entering the same at some Custom House for exportation and receiving a permit therefor. Such person shall make oath or affirmation, specifying the quantity and quality of the articles which he is about to export, and that the same are portions of caribou killed under license held by him, specifying the person from whom he obtained the said license, and the date thereof, and that the articles about to be exported are not being exported as articles of commerce, and the licensee shall thereupon pay a fee of fifty cents to the Officer of Customs before whom such export entry is made, which fee the said Officer is hereby authorized to retain.

(*b*) A person not a licensee, but domiciled in this Colony, may export the antlers, head or skin of a caribou upon entering the same for exportation at a Custom House in the Colony and receiving a special permit therefor. Such permit shall not be granted except upon an affidavit made before the Customs' Officer to whom application for a permit is made, stating the name of the owner of the article to be exported, its destination, and the person from whom and place where it was obtained. The affidavit shall be transmitted by the Officer of Customs to the Department of Finance and Customs.

Propagation: [Sec.] 21. It shall be lawful for the Minister of Marine and Fisheries to authorize the capture and exportation of caribou alive and the killing and exportation of caribou, or any part thereof, for the purpose of sale and of exchange to and with game societies or to museums, societies or institutions in other countries, despite any Act forbidding the exportation thereof; and the Minister of Marine and Fisheries may expend any portion of the fund derived hereunder from licenses in purchasing game birds or the eggs of game birds, or moose or elk or other wild animals for the purpose of increasing and improving game.

[Sec.] 24. Any person who shall be convicted of any violation of the provisions of this Act shall thereafter be incapable of receiving a license under this Act.

Penalties: [Sec.] 28. Any person who shall violate any section of this Act for which no other penalty is herein provided shall be liable to a fine not exceeding five hundred dollars, and in default of payment to imprisonment for any period not exceeding six months. If the master, owner, officers or crew of any vessel be convicted of a violation of section sixteen, the penalty for such violation shall constitute a claim against the said vessel, and become a lien thereon, and may be collected and enforced by the seizure, confiscation and sale of the said vessel despite any change of registry or ownership between the date of the office [offence] and the seizure of the vessel.

Passed June 19, 1899.

Acts of 1899, 62 and 63 Vic., cap. 27, p. 249.

Export of grouse: [SEC.] 2. It shall be unlawful for any person to export from this Colony for sale as an article of commerce any willow or other grouse, or partridge, under a penalty of five dollars for each bird so exported.

Penalty: [SEC.] 3. The penalty provided in the last preceding section may be sued for and recovered in a summary manner by any person before any Justice of the Peace, and in default of payment of such penalty the person liable therefor may be sentenced by such Justice to imprisonment for a period not exceeding three months.

Propagation: [SEC.] 4. It shall be lawful for the Minister of Marine and Fisheries at any time to authorize the hunting, shooting, taking, killing and export of any willow or other grouse, or partridge, and the taking and export of the eggs of any such game for the purpose of exchange with, or presentation to any other colony or any game society, or otherwise, as he may deem expedient and advisable, and on such terms and conditions as he may see fit to impose.

Passed July 19, 1899.

NORTHWEST TERRITORIES.

Consolidated Ordinances 1898, chap. 85.

Domestication: [SEC.] 2. * * * Provided also that the fawn of any of the said animals [elk, moose, cariboo, antelope, deer, mountain sheep or goat] may be taken alive and domesticated. No. 15 of 1895, s. 1; No. 26 of 1897, ss. 1, 3.

Export: [SEC.] 13. No person or corporation shall at any time or in any manner export or cause to be exported or carried out of the limits of the North-West Territories any grouse, partridge, pheasant, prairie chicken, elk, moose, cariboo, antelope or their fawn. No. 8 of 1893, s. 11; No. 26 of 1897, s. 5.

Penalties: [SEC.] 14. Any violation of any of the provisions of this Ordinance shall be an offence punishable, on summary conviction before a justice of the peace, * * * with a fine not exceeding $50, with costs of prosecution, half of which fine shall be paid to the informer on his demand therefor and the other half shall be paid into the general revenue fund of the North-West Territories. * * * On nonpayment of such fine and costs forthwith after conviction the offender shall be imprisoned in the nearest gaol for a period not exceeding two months. No. 8 of 1893, s. 12.

Permits: [SEC.] 16. The commissioner of agriculture upon application being made to him by any person may grant such person written permission to procure birds or eggs for scientific purposes during the close season.

(2) Every such application shall state the kind and number of birds or eggs required and the special scientific purposes for which such birds or eggs are intended and every application shall be verified by affidavit of the applicant. No. 8 of 1893, s. 14; No. 26 of 1897, s. 6.

Sale: [SEC.] 18. No person shall at any time offer for sale, barter or exchange any prairie chicken that has been caught or killed by any person other than himself. No. 8 of 1893, s. 16.

[SEC.] 19. No person shall sell or expose for sale, barter or trade nor shall any person buy or obtain from any other person by barter or trade or in any other manner any mountain sheep or goat or any part thereof. No. 26 of 1897, s. 2.

NOVA SCOTIA.

Statutes of 1896, 59 Vic., chap. 4, pp. 11, 14.

Game defined: [SEC.] 2. * * * "Game" shall mean and include moose, caribou, red deer, American elk, beaver, hares, wild rabbits, minks, and animals valuable only for their fur (except otters, skunks, woodchuck, raccoon, weasels, bears, wolves, loup-cerviers, wildcats, and foxes), Canada and ruffed grouse, commonly called partridge, pheasants, blackcock, capercailzie, ptarmigan, sharp-tailed grouse, woodcock, snipe, blue-winged ducks, teal, and wood-ducks.

Sale of moose or caribou: [SEC.] 9. Every person who brings or sends the carcase of a moose or caribou to the city of Halifax or any incorporated town for sale, shall bring or send together therewith the neck and forelegs of such moose or caribou, and shall retain and keep the same exposed, together with the meat so offered for sale, and any failure to do so shall be a violation of this section.

(2.) Any officer, member or agent of the Game and Inland Fishery Protection Society of Nova Scotia, any game commissioner, or any police or detective officer or constable, shall have the right, and it shall be his duty, to examine any carcase or part of a carcase of a moose or caribou wherever found or seen, and generally to make such search or enquiry as may be necessary for the purpose of ascertaining whether or not there has been a violation of this section; he shall also have the right, and it shall be his duty, to mark such neck and forelegs in such a manner as to render the same easy of identification; and any one who obstructs, impedes or interferes with such officer, member, agent, or other person in the discharge of his duty, or refuses to give him information or help if requested, shall be guilty of a violation of this section.

(3.) Any person violating this section shall be liable on conviction to a penalty not exceeding fifty dollars.

Licenses: [SEC.] 23. Any game mentioned in this Act may be killed or taken at any time for purposes of scientific investigation, and the eggs of game birds procured for propagation, a special license, setting forth the particular purpose of the inquiry, and signed by the Provincial Secretary, or his deputy, having been first obtained for that purpose from the Provincial Secretary's office.

Passed February 15, 1896.

ONTARIO.

Statutes of Ontario, 63 Vic., 1900, chap. —.

Game defined: [SEC.] 2.—(1) The expressions "game animal" and "game bird" wherever the same occur in this Act, shall mean a bird or animal protected by the provisions of this Act. [Deer, moose, reindeer or caribou, elk or wapiti, black and grey squirrels, hare, cotton-tail rabbit, beaver, otter, muskrat; grouse, pheasant, prairie fowl or partridge, woodcock, quail, wild turkey, swan, goose, duck or other water fowl, snipe, rail, plover or other shore birds.] R. S. O. 1897, c. 287, s. 2.

Special protection: [SEC.] 7. (2) If at any time it shall appear that any migratory game bird is in danger of extinction, and that the hunting, shooting and sale thereof has been, or is about to be, by law forbidden in any two or more of the United States of America lying to the south of the Province of Ontario, one of such States being the State of New York or the State of Pennsylvania or the State of Michigan, the Lieutenant-Governor-in-Council may by Order-in-Council in like manner protect such migratory game bird in this Province for the period in which the same is protected in such States.

(3) If at any time it shall appear that any game animal or non-migratory game bird has for any reason become so diminished in numbers in this Province as to require further protection than is afforded thereto by the provisions of this Act, the Lieutenant-Governor-in-Council may by Order-in-Council forbid the hunting, shooting and sale thereof during any year or season in which such hunting, shooting and sale would under the provisions of this Act be lawful.

Hunting for hire: [SEC.] 12. No person shall for hire, gain or hope of reward, hunt, kill or shoot any game birds or animals, or employ, hire or for valuable consideration induce any other person so to do. Provided that this shall not be held to apply to the *bona fide* employment of any person as guide to accompany any person lawlufly hunting or shooting in this Province. 62 V. (2), c. 33, s. 5.

Sale: [Sec.] 15. (2) Except as expressly authorized by license issued under this Act, and as in this section expressly provided, no person shall by himself, his servant, clerk or agent, buy, sell, or expose or keep for sale, or directly or indirectly, on any pretense or device, or for any valuable consideration, barter, give or obtain, to or from any other person, any game animal or bird, or any part thereof, no matter where killed or procured. Provided that the person who has actually and lawfully hunted, taken and killed any game animal or bird may sell the same, or any part thereof, during the open season therefor. Provided also that it shall be lawful to buy from such person, or from the holder of a game dealer's license, any game animal or bird, which such person or licensee is at the time of such sale authorized to sell under the provisions of this Act. Provided also that notwithstanding anything in this Act contained, no snipe, woodcock, quail or partridge shall be bought or sold before September 15th, 1905. 62 V. (2), c. 33, s. 5.

Shipment: [Sec.] 16.—(1) No common carrier or other person shall transport, or receive, or have in possession for that purpose in this Province, at any time, any deer, moose, elk, reindeer, or caribou, or any head, skin or other part thereof, unless there is attached thereto one of the shipping coupons belonging to a license authorizing the shipper to hunt or kill the same as provided in this Act. 62 V. (2) c. 33, s. 7.

(2) No common carrier or other person shall transport or receive or have in possession for that purpose in this Province, any game bird or animal, or any head, skin, or other part thereof, during the close season therefor, unless there be attached thereto (in addition to a shipping coupon if required) an affidavit of the shipper that the same was lawfully hunted and taken. 62 V. (2) c. 33, s. 7.

(3) The two preceding sub-sections shall not apply to prevent the transportation of any deer, moose, elk, reindeer or caribou, or any head, skin or other part thereof, if accompained by an affidavit that the same was lawfully killed in some other Province of the Dominion of Canada according to the law of such Province. 62. V. (2) c. 33, s. 8 pt.

(4) Any non-resident who may at any time be entitled to hunt or shoot within the Province of Ontario by virtue of a license under this Act, shall, so far as the authority of the Legislature of the Province of Ontario extends, be at liberty to export out of the Province in any one open season game actually and lawfully killed by him, as follows: one bull moose, reindeer or caribou, deer (not exceeding 2), duck (not exceeding 100); but a shipping coupon attached to such license as hereinafter provided must be attached to every such deer and to every parcel or package containing such other game, and such person must, if required by any warden or deputy warden, make a statutory declaration of the fact that such game has been lawfully killed by him. R. S. O. 1897, c. 287, ss. 4 (3), 14 (3), 62 V. (2) c. 33, s. 2 (1).

(5) Except as aforesaid, no person shall at any time export from the Province of Ontario, or with such intent hunt, take or kill any game animal or bird, except any deer, moose, elk, reindeer or caribou which are not wild but which are the private property of any person and have been killed or taken by such person or by his consent in and upon his own lands and premises. R. S. O. 1897, c. 287, s. 14 (3).

(6) Every express company and common carrier, and every person or corporation engaged in the business of purveying or dealing in game, shall upon request permit any warden or deputy warden to enter and inspect any building or car for the purpose of searching for game illegally killed or possessed, and shall afford such warden or deputy warden all reasonable facilities in making such search. 62 V. (2) c. 33, s. 8 pt.

(7) All bags, boxes and parcels of every kind in which game is packed for transportation, shall be so constructed as to show the contents thereof and shall be

marked or labelled with the description of the contents and the name and address of the owner thereof. 62 V. (2) c. 33, s. 8.

Coupons: [Sec.] 26.—(1) There shall be attached to every [hunting] license issued under the preceding section two shipping coupons according to the form established by the Board of Game Commissioners as aforesaid, except that only one coupon shall be attached to license to hunt moose, and when any deer, moose, reindeer or caribou, or any part thereof, or any game for export under section sixteen of this Act, is presented for shipment at any railway station, steamboat landing or other point of shipment, one of the said coupons shall be signed and detached by the person to whom the license is issued, in the presence of the shipping agent or clerk in charge of the office at such point of shipment, and attached to each deer or other animal, or part thereof, or package as aforesaid, and thereupon such shipping agent shall write across the face of such coupon the word "cancelled"; and any person, shipping agent or clerk neglecting so to do, or shipping or assisting in the shipment of anything to which a shipping coupon is required to be attached, without complying in all respects with the provisions of this section, shall be guilty of an offense against this Act. R. S. O., 1897, c. 287, s. 3 (3). 62 V. (2), c. 33, ss. 1, (1), 2 (1).

(2) The Chief Warden if satisfied that more than two shipping coupons will reasonably be required by a non-resident applying for a license under Section 25a of this Act, may issue to such person non-resident license having more than two coupons thereto, an additional duplicate license upon payment of such additional fee and subject to such conditions as may be established by regulation of the Board of Game Commissioners.

Licenses: [Sec.] 27.—(1) The Chief Warden shall, subject to such rules and conditions, and upon payment of such fees, not exceeding the amounts hereinafter specified, as may from time to time be fixed and established by regulation of the Board of Game Commissioners, issue licenses to persons applying therefor for the purposes hereinafter specified.

COLD STORAGE.

(*a*) Authorizing any person or corporation engaged in the business of cold storage of perishable articles to keep any game animals or birds during the close season therefor in any year and until the commencement of the next open season. License fee $25.00. 62 V., (2), c. 33, s. 5.

GAME DEALERS.

(*b*) Authorizing any person or corporation during the open season and during such period in close season not exceeding twenty days as may be fixed by regulation of the Board of Game Commissioners, to buy and sell, and, within the limits of the municipality for which license is issued, to expose for sale, game animals and birds lawfully killed and procured; and during such period and upon such conditions as may be fixed and established by regulation of the Board of Game Commissioners, game animals and birds imported into the Province of Ontario specified and described in such regulation and lawfully hunted, killed or procured according to the law of the Province, State or Country where the same may have been killed or procured. License fee in cities having a population of 100,000 or over, $25; in other cities having a population of over 50,000, $10; in other cities having a population under 50,000 and over 25,000, $5; in cities having a population under 25,000 and in towns, $2; and in incorporated villages and townships, $1.

HOTELS, RESTAURANTS AND CLUBS.

(*c*) Authorizing a hotel, restaurant or club to supply during close season for or as part of a meal served upon the premises of such hotel, restaurant or club, any game animal or bird lawfully obtained during the period in which the same may be sold under game dealer's license as hereinbefore provided. The license fees shall be for cities having a population of over 100,000, $10; for cities having a population of over 50,000, $5; and in cities having a population of less than 50,000 and all other municipalities, $1. 62 V. (2) c. 33, s. 5.

Penalties: [Sec.] 29.—(1) Any person committing any offence under this Act in respect of deer, moose, elk, reindeer, cariboo * * * shall be liable for each offence to a fine not exceeding $50 and not less than $20, together with the costs of prosecution, and any person committing any other offence against any of the provisions of this Act shall be liable for each offence to a fine not exceeding $25 and not less than $5, together with the costs of prosecution, and in default of immediate payment of such fine and costs, shall be imprisoned in the common gaol of the county where such conviction takes place, for a period not exceeding three months. 62 V. (2), c. 33, s. 10 (1).

(3) A violation of this Act shall constitute a separate offence in respect of each and every game animal or bird which is the subject thereof. * * *

(4) Any person offending against any of the provisions of this Act who has been convicted of the same or any other offence against this Act within two years theretofore, shall be liable to a penalty of not less than double the minimum penalty hereinbefore provided for such second offence, and upon a third or any subsequent conviction such person shall be liable to a penalty of not less than the maximum penalty hereinbefore provided. 62 V. (2) c. 33, s. 10 (2).

QUEBEC.

Revised Statutes as amended by Statutes of 1899, 62 Vic., Chap. XXIV.

Shipment: [Art.] 1397. After the first [fifteen][1] days of the close season, all railway, steamboat and other companies, and public carriers, are forbidden to carry [any moose, caribou or deer, the whole or any part of the flesh of such animal or the green hide thereof.]

Any railway, steamboat or other company or any person favoring in any manner whatever the contravention of this article, shall be liable to a penalty [of not less than ten dollars, and not more than twenty dollars.]

Nevertheless, it is lawful for the Commissioner, at any time, to grant transport permits when it has been established to his satisfaction that the moose, caribou or deer or parts thereof which it is desired to transport have been taken or killed during the time when hunting is allowed and in a lawful manner.

For such permits there may be exacted a fee, the amount whereof shall be fixed by the Commissioner, according to circumstances, but which shall not exceed five dollars.

Sale seasons: [Art.] 1405. Every animal or bird protected by the preceding articles when lawfully taken or killed, or any portion of such animal or bird may be bought or sold, during [fifteen days] to be computed from the expiration of the period fixed by the section for the taking or killing thereof.

Assented to February 25, 1899.

Statutes of 1901, 1 Ed. VII, Chap. 12, p. 52–54.

Sale of partridges: [Art.] 3. The following article is added after article 1400 of the Revised Statutes, as enacted by the said act:

1400*a*. It is forbidden to sell, expose for sale or to have in possession for the purpose of sale, any birch- or swamp-partridge before the first day of October, 1903.

Every delivery of partridge, otherwise than merely gratuitous, shall constitute a sale in the terms of this provision.

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[1] Words in brackets indicate changes in the Revised Statutes.

Any infringement of the provisions of this article shall render the person guilty thereof liable to a fine not exceeding $15.00 and not less than $5.00.

Licenses: [ART.] 6. The following articles are added to the Revised Statutes after article 1417*a*, as enacted by the said act:

* * * * * * *

1417*d*. The Commissioner may, upon payment to him of a fee according to a tariff established by the Lieutenant-Governor in Council, grant to any person, company or corporation keeping cold storage warehouses or to any hotel or restaurant keeper or to any club, an annual license permitting of the keeping in such cold storage warehouses or in refrigerators, during the close season, game to be used as food, and in addition, if it concerns a hotel, restaurant or club, to serve for consumption therein, during the close season, all game of which the sale is not prohibited in virtue of article 1400*a* or 1420, provided that in all such cases the game has been lawfully taken or killed during the time when hunting is permitted.

The application for the license must be in writing and give a description of the place in which such game is to be stored.

The license describes the place for which it is granted, gives the name and address of the person, company, corporation or club licensed, specifies the year for which it is issued, and is signed by the Commissioner, and countersigned by the Game Superintendent.

All persons, companies, corporations or clubs, licensed in virtue of this article, are prohibited from receiving after the end of the fifteenth day following the commencement of the close season, any game for the purpose of placing it in refrigerators or of selling it for consumption under this article.

Every game-keeper or other person authorized by the Commissioner may, at reasonable hours, inspect such warehouses and refrigerators, and seize therein any game he has reason to believe to have been taken or killed during the close season or by any unlawful means or having been received after the end of the fifteenth day following the commencement of the close season, and bring it before a justice of the peace who, if the law has been infringed, shall declare the whole or part thereof confiscated for the benefit of the province.

The proof that game stored or sold for consumption under this article was lawfully killed or taken during the time when hunting is permitted, or that it has not been received for storage or for sale for consumption after the end of the fifteenth day following the commencement of the close season, is at the charge and expense of the person, company or corporation keeping the cold storage warehouse, or of the proprietor of the hotel or restaurant, or of the club, in which the game is found.

Every person, company, corporation or club receiving game for storage or for sale for consumption or storing game contrary to the provisions of this article, shall be liable to a fine of $20.00 at least, and not more than $100.00.

Special sale prohibition: [ART.] 7. Article 1420 of the Revised Statutes,[1] as enacted by the said act, is amended by adding thereto the following clause:

The Lieutenant-Governor in Council may also, whenever he deems it expedient, prohibit, for a term not exceeding three years, the sale, the offering for sale, or the possession for the purpose of sale of any game protected by the preceding articles, or prolong, for a similar time, the prohibition to sell, offer for sale or to have in possession for the purpose of sale, any game of which the sale, exposing for sale or the possession for the purpose of sale is prohibited by any provision of law.

Assented to March 28, 1901.

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[1] ART. 1420. The Lieutenant-Governor in Council may, in his discretion, prohibit the hunting or killing of any bird or fur-bearing animal for a period not exceeding five years.

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U. S. DEPARTMENT OF AGRICULTURE

CLOSE SEASONS FOR GAME IN THE UNITED STATES AND CANADA, 1901

[Compiled by T. S. Palmer and H. W. Olds.]

The following table shows the close seasons for all game in the United States and Canada, with the exception of mountain sheep, mountain goat, and a few unimportant species.

The first date of the close season and the first date of the open season are given, so that open seasons may be found by reversing the dates.

The term rabbit includes 'hare' of the Canadian laws; quail, the bird known as 'partridge' in the South; grouse, includes Canada grouse, sharp-tailed grouse, ruffed grouse (known as 'partridge' in the North and 'pheasant' in the South), and all members of the family except prairie chickens, ptarmigan, and sage hens. Introduced pheasant is restricted to the Old World pheasants; and goose includes 'brant.'

States are arranged geographically and grouped according to the Hallock Code. The general State laws have been followed in Maryland, North Carolina, and Virginia; but many county laws prevail in these States and in Tennessee.

[Compiled, in part, from Game Laws in Brief and corrected to August 1, 1901.]

		MAMMALS.						BIRDS.			
	State.	Deer.	Elk.	Moose, Caribou.	Antelope.	Squirrel.[2]	Rabbit.	Quail.	Grouse.	Prairie Chicken.	Wild Turkey.
NORTHERN.	Maine	Dec. 15-Oct. 1[1]		Dec. 1-Oct. 15[14]				Dec. 1-Oct. 1	Dec. 1-Sept. 15		
	New Hampshire	At all times[1]	At all times	At all times		Jan. 1-Sept. 15	Apr. 1-Oct. 1	Dec. 15-Sept. 15	Dec. 15-Sept. 15		
	Vermont	Nov. 1-Oct. 22		At all times			May 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1		
	Massachusetts	To Nov. 1, 1903				Mar. 1-Oct. 1[1]	Mar. 1-Oct. 1[1]	Dec. 1-Oct. 1[1]	Dec. 1-Oct. 1[1]		
	Rhode Island	To Feb. 1, 1905				Jan. 1-Oct. 15	Jan. 1-Oct. 15	Dec. 16-Oct. 15	Dec. 16-Oct. 15		
	Connecticut	To June 1, 1911				Dec. 1-Oct. 1	Jan. 1-Oct. 1	Dec. 1-Oct. 1	Dec. 1-Oct. 1		
	New York[1]	Nov. 16, Sept. 1	At all times	At all times	At all times	Dec. 16-Sept. 1	Dec. 16-Sept. 1	Dec. 16-Nov. 1	Dec. 16-Sept. 16		
	Long Island	Exc'pt 4 days Nov.				Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1		
	New Jersey	At all times				Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1		
	Pennsylvania	Dec. 1-Nov. 1	Dec. 1-Nov. 1			Dec. 10-Oct. 15	Dec. 16-Nov. 1	Dec. 16-Oct. 15	Dec. 16-Oct. 15	Dec. 16-Oct. 15	Dec. 16-Oct. 15
	Delaware						Jan. 1-Nov. 15	Jan. 1-Nov. 15	Jan. 1-Nov. 15		
	Maryland[1]	Jan. 1-Aug. 1				Dec. 1-Sept. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1		Dec. 25-Nov. 1
	Dist. Columbia	Jan. 1-Sept. 1[6]				Feb. 1-Nov. 1	Feb. 1-Nov. 1	Mar. 15-Nov. 1	Dec. 26-Nov. 1	Mar. 15-Sept. 1	Dec. 26-Nov. 1
	Virginia[1]	Jan. 1-Aug. 15					Local laws	Jan. 1-Oct. 15	Feb. 1-Sept. 15		Feb. 1-Sept. 15
	West Virginia	Dec. 15-Oct. 15						Dec. 20-Nov. 1	Dec. 15-Oct. 15	Dec. 15-Oct. 15	Jan. 1-Sept. 15
	Kentucky	Mar. 1-Sept. 1				Feb. 1-June 15		Jan. 1-Nov. 15	Jan. 1-Nov. 15		Feb. 1-Sept. 1
	Ohio	Dec. 16-Nov. 10				Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	
	Michigan	Dec. 1-Nov. 8	To 1911	To 1911		Dec. 1-Oct. 15		Dec. 1-Oct. 20[19]	Dec. 1-Oct. 20[19]	To 1910	To 1910
	Indiana	At all times				Jan. 1-June 1[17]		Jan. 1-Nov. 10	Jan. 1-Nov. 10	Jan. 1-Nov. 10	At all times
	Illinois	To May 10, 1906				Dec. 1-July 1		Dec. 20-Nov. 1	Oct. 1-Aug. 31	Oct. 1-Aug. 31	Jan. 15-Sept. 1
	Wisconsin	Dec. 1-Nov. 11[1]				May 1-July 1	May 1-July 1	To Sept., 1903	Dec. 1-Sept. 1	Dec. 1-Sept. 1	
	Minnesota	Dec. 1-Nov. 11	At all times	Nov. 21-Nov. 16				Dec. 1-Oct. 1	Dec. 1-Oct. 1	Nov. 1-Sept. 1	
	Iowa	At all times	At all times			Jan. 1-June 1		Jan. 1-Nov. 1	Jan. 1-Nov. 1	Dec. 1-Sept. 1	Jan. 1-Nov. 1
	Missouri	Jan. 1-Oct. 1						Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1
	Kansas							Jan. 1-Dec. 1	Oct. 1-Aug. 15	Oct. 1-Aug. 15	
	Nebraska	Nov. 16-Aug. 15	At all times		Nov. 16-Aug. 15			To Nov. 1, 1903	Dec. 1-Oct. 1	Dec. 1-Oct. 1	At all times
	South Dakota	Jan. 1-Nov. 1	Jan. 1-Nov. 1		To Jan. 1, 1911			Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1	
	North Dakota	Dec. 1-Nov. 10	At all times	At all times	To Jan. 1, 1911			To Sept. 1, 1905	Oct. 15-Sept. 1	Oct. 15-Sept. 1	
	Montana	Jan. 1-Sept. 1	Nov. 1-Sept. 1	At all times	At all times			At all times	Dec. 1-Sept. 1	Dec. 1-Sept. 1	
	Wyoming	Dec. 1-Sept. 1	Dec. 1-Sept. 1	To Sept. 1, 1902[15]	Dec. 1-Sept. 1				Dec. 1-Aug. 15	Dec. 1-Aug. 15	
	Colorado	Nov. 6-Aug. 15	Nov. 6-Oct. 25		Nov. 6-Aug. 15			At all times	Nov. 1-Aug. 15	Nov. 1-Aug. 15	Nov. 1-Aug. 15
SOUTHERN.	North Carolina[1]	Jan. 1-Oct. 1				Local laws		Mar. 15-Nov. 1			Mar. 15-Nov. 1
	South Carolina	Feb. 1-Sept. 1[1]						Apr. 1-Nov. 1	Apr. 1-Nov. 1		Apr. 1-Nov. 1
	Georgia	Jan. 1-Sept. 1						Mar. 15-Nov. 1	Mar. 15-Nov. 1		Mar. 15-Nov. 1
	Florida	Feb. 1-Oct. 1						Mar. 1-Nov. 1			Mar. 1-Nov. 1
	Alabama[1]	Jan. 1-Sept. 1				Feb. 2-July 1		Mar. 2-Nov. 15	Mar. 2-Nov. 15	Mar. 2-Nov. 15	Mar. 2-Nov. 15
	Mississippi	Mar. 1-Sept. 15						May 1-Oct. 1			May 1-Oct. 1
	Tennessee[1]	Jan. 1-Aug. 1						Mar. 1-Nov. 1	Feb. 1-Sept. 1		Apr. 1-Oct. 1
	Arkansas	Mar. 1-Sept. 1						Mar. 1-Oct. 1		Dec. 1-Oct. 31	May 1-Sept. 1
	Louisiana	Feb. 15-Sept. 15						Mar. 1-Oct. 1	Mar. 1-Oct. 1		May 1-Oct. 1
	Texas	Jan. 1-Sept. 1			To May 27, 1902			Mar. 15-Oct. 1		Feb. 1-Aug. 1	Apr. 1-Sept. 1
	Oklahoma	At all times			At all times			Feb. 1-Oct. 15	At all times	Jan. 1-Sept. 1	Jan. 1-Sept. 1
	New Mexico	To Mar. 19, 1906	To Mar. 19, 1906		To Mar. 19, 1906			Mar. 1-Oct. 1	Jan. 1-Oct. 1	Jan. 1-Oct. 1	Jan. 1-Oct. 1
	Arizona	Dec. 15-Nov. 15	At all times		To Jan. 1, 1906			Mar. 1-Oct. 15	Mar. 1-Oct. 15		Dec. 15-Nov. 15
PACIFIC.	California	Oct. 1-Aug. 1	At all times		At all times	Feb. 1-Aug. 1[3]		Feb. 1-Oct. 1	Feb. 1-Oct. 1		
	Nevada	To Mar. 28, 1903	At all times	At all times[18]	To Mar. 28, 1903			Mar. 16-Sept. 1[3]	To Sept. 1, 1903	Mar. 16-Sept. 1	
	Utah	Nov. 15-Oct. 15	At all times		At all times			At all times[1]	Dec. 1-Aug. 15	Dec. 1-Aug. 15	
	Idaho	Jan. 1-Sept. 1	Dec. 1-Sept. 1	To 1904	Jan. 1-Sept. 1			Dec. 1-Nov. 1	Dec. 1-Aug. 15	Dec. 1-Aug. 15	
	Washington	Dec. 15-Sept. 15	Nov. 1-Sept. 1	Nov. 1-Sept. 1	Nov. 1-Sept. 1			To 1903	Dec. 1-Aug. 15	Dec. 1-Aug. 15[1]	
	Oregon[1]	Nov. 1-July 15[1]	To Sept. 15, 1904	Nov. 1-July 15[1] [15]	Nov. 1-July 15[1]	Jan. 1-Oct. 1		Dec. 1-Oct. 1	Dec. 1-Oct. 1	Dec. 1-Oct. 1	To Oct. 1, 1905
CANADA.	British Columbia	Dec. 15-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1			Jan. 1-Sept. 1	At all times	Jan. 1-Sept. 1	Jan. 1-Sept. 1	
	N.W. Territories[10]	Dec. 15-Nov. 1	Dec. 15-Nov. 1	Dec. 15-Nov. 1	Dec. 15-Nov. 1				Dec. 15-Sept. 15	Dec. 15-Sept. 15	
	Manitoba	Dec. 1-Sept. 15	Dec. 1-Sept. 15	Dec. 1-Sept. 15	Dec. 1-Sept. 15			Jan. 1-Aug. 1	Nov. 15-Sept. 15	Nov. 15-Sept. 15	
	Ontario	Nov. 16-Nov. 1	At all times	To Nov. 1, 1903		Dec. 16-Sept. 15	Dec. 16-Sept. 15	Dec. 16-Oct. 15	Dec. 16-Sept. 15	To Sept. 15, 1905	To Oct. 15, 1905
	Quebec	Jan. 1-Sept. 1[1]		Jan. 1-Sept. 1[1]			Feb. 1-Nov. 1[1]		Dec. 15-Sept. 1[1]		
	New Brunswick	Jan. 1-Sept. 15[1]		Jan. 1-Sept. 15[1]					Dec. 1-Sept. 15[1]		
	Nova Scotia	To 1904	To 1904	Jan. 1-Sept. 15[1]			Feb. 1-Oct. 1[2]		To Oct. 1, 1901[2]		
	Newfoundland		To Jan. 1, 1906	To Jan. 1, 1906[20]			Mar. 1-Sept. 16		Jan. 12-Sept. 16		

		BIRDS.							
	State.	Dove.	Introduced Pheasant.	Plover.	Snipe.	Woodcock.	Rail.	Duck.	Goose, Swan.
NORTHERN.	Maine	At all times	To Mar. 22, 1911	May 1-Aug. 1	May 1-Aug. 1	Dec. 1-Sept. 15		Dec. 1-Sept. 1[5]	
	New Hampshire	At all times		Feb. 1-Aug. 1[1]	Dec. 15-Sept. 15[1]	Dec. 15-Sept. 15	Feb. 1-Aug. 1	Feb. 1-Aug. 1[7]	
	Vermont	At all times	Nov. 20-Oct. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1	Jan. 1-Sept. 1		Jan. 1-Sept. 1	Jan. 1-Sept. 1[14]
	Massachusetts	At all times	To 1905	May 1-July 16	May 1-July 16	Dec. 1-Oct. 1[1]	May 1-July 15	Mar. 1-Sept. 1[2]	
	Rhode Island	At all times	To Oct. 1, 1905			Dec. 16-Oct. 15		Apr. 1-Aug. 15[2]	
	Connecticut	At all times	To June 1, 1906	Apr. 1-Sept. 1	Apr. 1-Sept. 1	Dec. 1-Oct. 1	Apr. 1-Sept. 1[1]	Apr. 1-Sept. 1	Apr. 1-Sept. 1
	New York[1]	At all times	To 1905	May 1-Sept. 1	May 1-Sept. 1	Dec. 16-Sept. 10	May 1-Sept. 1	Apr. 30-Sept. 1	Apr. 30-Sept. 1
	Long Island	At all times	Jan. 1-Nov. 1	Jan. 1-July 1	Jan. 1-July 1	Jan. 1-Aug. 1	Jan. 1-July 1	May 1-Oct. 1	May 1-Oct. 1
	New Jersey	Oct. 1-Aug. 1	Jan. 1-Nov. 1[2]	Oct. 1-Aug. 1[8]	Jan. 1-Aug. 25[17]	Jan. 1-Oct. 1[3]	Jan. 1-Aug. 25	May 1-Sept. 1	May 1-Sept. 1
	Pennsylvania		To May 27, 1902	Jan. 1-July 15[8]		Dec. 16-Oct. 15[1]	Dec. 1-Sept. 1	May 1-Sept. 1	May 1-Sept. 1
	Delaware	At all times					Feb. 1-Sept. 1	Apr. 15-Oct. 1[2]	Apr. 15-Oct. 1
	Maryland[1]	Dec. 25-Aug. 15	Dec. 25-Nov. 1	May 1-Aug. 15	May 1-Aug. 15	Dec. 25-Nov. 1[3]	Nov. 1-Sept. 1	Apr. 10-Nov. 1	Apr. 10-Nov. 1
	Dist. Columbia	At all times		Apr. 1-Sept. 1	Apr. 1-Sept. 1	Jan. 1-July 1	Feb. 1-Sept. 1	Apr. 1-Sept. 1	Apr. 1-Sept. 1[16]
	Virginia[1]		At all times			Apr. 1-Nov. 1		May 1-Sept. 1[2]	May 1-Sept. 1
	West Virginia	At all times			July 1-Mar. 1	Nov. 2-July 15		Apr. 1-Oct. 1	Apr. 1-Oct. 1[16]
	Kentucky	Feb. 1-Aug. 1				Feb. 1-June 20		Apr. 1-Aug. 15	Apr. 1-Aug. 15[16]
	Ohio	Dec. 15-July 5[5]	Dec. 16-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10	Dec. 2-Nov. 10[4]	
	Michigan	At all times	To 1910	Dec. 1-Oct. 20	Dec. 1-Oct. 1[12]	Dec. 1-Oct. 20[19]		Dec. 1-Oct. 1[19]	Dec. 1-Oct. 1[12]
	Indiana	Jan. 1-Aug. 15[13]	At all times			Jan. 1-July 1		Apr. 15-Sept. 1[12]	Apr. 15-Sept. 1[17]
	Illinois	Dec. 1-Aug. 1	To May 10, 1906	Apr. 25-Sept. 1	Apr. 25-Sept. 1			Apr. 15-Sept. 1	Apr. 15-Sept. 1
	Wisconsin	At all times	To Sept., 1903	Dec. 1-Sept. 1	Dec. 1-Sept. 1	Dec. 1-Sept. 1		Jan. 1-Sept. 1	May 1-Sept. 1[17]
	Minnesota	Nov. 1-Sept. 1	To Sept. 1, 1904	Oct. 31-July 4[8]	Nov. 1-Sept. 1	Oct. 31-July 4		Jan. 1-Sept. 1	Jan. 1-Sept. 1
	Iowa	At all times				Jan. 1-July 10		Apr. 15-Sept. 1	Apr. 15-Sept. 1[16]
	Missouri	Jan. 1-Aug. 1	Jan. 1-Nov. 1	Jan. 1-Aug. 1		Jan. 1-Aug. 1		Apr. 1-Oct. 1	
	Kansas	Sept. 15-July 15		Sept. 15-July 15					
	Nebraska	Oct. 31-Apr. 15	At all times	Oct. 31-Apr. 15	Apr. 16-Sept. 1			Apr. 16-Sept. 1	Apr. 16-Sept. 1
	South Dakota			May 15-Sept. 1		Jan. 1-Sept. 1		May 1-Sept. 1	May 1-Sept. 1[16]
	North Dakota		To Sept. 1, 1905			Oct. 15-Sept. 1		May 1-Sept. 1	May 1-Sept. 1[17]
	Montana	Dec. 15-Aug. 1	At all times					May 1-Sept. 1	May 1-Sept. 1
	Wyoming	At all times	To Sept. 1, 1906	May 1-Sept. 1	May 1-Sept. 1		May 1-Sept. 1	May 1-Sept. 1	May 1-Sept. 1[17]
	Colorado	Oct. 1-July 15	At all times		Apr. 16-Sept. 1[9]			Apr. 16-Sept. 1[9]	Apr. 16-Sept. 1[9]
SOUTHERN.	North Carolina[1]	Mar. 15-Nov. 1						Local laws	Local laws
	South Carolina	Mar. 1-Aug. 1	To Dec. 22, 1903			Apr. 1-Nov. 1			
	Georgia	Mar. 15-Aug. 15	To Nov. 30, 1905						
	Florida							Apr. 1-Oct. 1	
	Alabama	Mar. 1-Aug. 1	To Feb. 8, 1904			Mar. 2-Nov. 15			
	Mississippi	Mar. 1-Sept. 15							
	Tennessee[1]	Feb. 1-Nov. 1	To Mar. 13, 1902	May 1-Sept. 1	Mar. 1-Sept. 15	Mar. 1-Sept. 15		May 1-Sept. 1	
	Arkansas	At all times							
	Louisiana	Mar. 1-Oct. 1						Apr. 1-Sept. 1[2]	
	Texas		To May 27, 1902						
	Oklahoma	Jan. 1-Aug. 1	To Jan. 1, 1904	Jan. 1-Aug. 1					
	New Mexico		To Mar. 14, 1906						
	Arizona		Mar. 1-Oct. 15		Mar. 1-Oct. 15		Mar. 1-Oct. 15	Mar. 1-Oct. 15	Mar. 1-Oct. 15[18]
PACIFIC.	California	Feb. 1-Aug. 1	At all times	Feb. 1-Oct. 1			Feb. 1-Oct. 1	Feb. 1-Oct. 1	
	Nevada	Nov. 2-July 15	To Sept. 1, 1906	Mar. 16-Sept. 1	Mar. 16-Sept. 1	Mar. 16-Sept. 1		Mar. 16-Sept. 1	Mar. 16-Sept. 1
	Utah	Dec. 1-July 1	At all times		Jan. 15-Oct. 1			Jan. 15-Oct. 1	Jan. 15-Oct. 1
	Idaho		To 1902					Mar. 1-Aug. 15	Mar. 1-Aug. 15
	Washington		To Aug. 15, 1905[1]	Mar. 1-Aug. 15			Mar. 1-Aug. 15	Mar. 1-Aug. 15	Mar. 1-Aug. 15
	Oregon		To Oct. 1, 1905	Jan. 1-Aug. 1			Jan. 1-Aug. 1	Mar. 1-Sept. 1[1]	Mar. 1-Sept. 1[1]
CANADA.	British Columbia		At all times	Mar. 1-Sept. 1				Mar. 1-Sept. 1	
	N.W. Territories[10]				May 5-Aug. 23			May 5-Aug. 23	
	Manitoba	At all times		Jan. 1-Aug. 1	Jan. 1-Aug. 1	Jan. 1-Aug. 1		Jan. 1-Sept. 1	
	Ontario		To Sept. 15, 1905	Dec. 16-Sept. 15	Dec. 16-Sept. 15	Dec. 16-Sept. 15	Dec. 16-Sept. 15	Dec. 16-Sept. 1	May. 1-Sept. 15
	Quebec			Feb. 1-Sept. 1	Feb. 1-Sept. 1	Feb. 1-Sept. 1		Mar. 1-Sept. 15[2]	
	New Brunswick		At all times		Dec. 2-Sept. 1	Dec. 2-Sept. 1		Dec. 2-Sept. 1	Dec. 2-Sept. 1[2]
	Nova Scotia		At all times		Mar. 1-Sept. 1	Mar. 1-Sept. 1		Mar. 1-Sept. 1	
	Newfoundland			Jan. 12-Sept. 16	Jan. 12-Sept. 16			Jan. 12-Sept. 16	

PROTECTED IN A FEW STATES ONLY.

Ptarmigan.

Colorado	At all times
Washington	Dec. 1-Aug. 15
Quebec	Feb. 1-Nov. 1
Nova Scotia	At all times
Newfoundland	Jan. 12-Sept. 16

Sage Hen.

Nebraska	Dec. 1-Oct. 1
Montana	Dec. 15-Aug. 1
Wyoming	Oct. 15-July 15
Colorado	Nov. 1-Aug. 15
California	Feb. 1-Oct. 1
Nevada	Mar. 2-July 1
Utah	Dec. 1-Aug. 15
Idaho	Dec. 1-Aug. 15
Washington	Dec. 1-Aug. 15

Reedbird.

New Jersey	Jan. 1-Aug. 25
Pennsylvania	Dec. 1-Sept. 1
Delaware	Feb. 1-Aug. 25
Maryland	Nov. 1-Sept. 1[3]
Dist. Columbia	Feb. 1-Sept. 1

Curlew.

Connecticut	Apr. 1-Sept. 1
New York	May 1-Sept. 1[1]
South Dakota	May 15-Sept. 1
Nebraska	At all times
Wyoming	May 1-Sept. 1
Colorado	Apr. 16-Sept. 1[9]
California	Feb. 1-Oct. 1
Nevada	Mar. 16-Sept. 1
Quebec	Feb. 1-Sept. 16
Newfoundland	Jan. 12-Sept. 16

Crane.

Nebraska	Apr. 16-Sept. 1
South Dakota	May 1-Sept. 1
North Dakota	May 1-Sept. 1
Colorado	Apr. 16-Sept. 1[9]
Nevada	Mar. 16-Sept. 1
Washington	Mar. 1-Aug. 15

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[1] Certain county exceptions. [2] Certain species. [3] Except month of July. [4] Except Mar. 10-Apr. 11. [5] Except month of April. [6] Sale. [7] Except month of March. [8] Upland plover only. [9] Altitudes above 7,000 feet, Apr. 16-Sept. 15. [10] Except unorganized Territories in which the seasons are as follows: Deer, elk, caribou, mountain sheep, mountain goat, Apr. 1-July 15 and Oct. 1-Dec. 1; musk-ox, Mar. 20-Oct. 15; grouse, prairie chicken, Jan. 1-Sept. 1; duck, goose, swan, Jan. 15-Sept. 1. [11] Except July 16-Oct. 1. [12] Also Oct. 1-Nov. 10, unless permit be obtained. [13] Except certain species, Mar. 2-Apr. 11. [14] Caribou protected in Maine to Oct. 15, 1905. [15] Moose only. [16] Goose only. [17] Swan: North Dakota, to Sept. 1, 1905, Wisconsin and Wyoming, at all times. [18] Caribou only. [19] Under the old law, which still stands. [20] Moose only; caribou, Feb. 1-July 16 and Oct. 1-21.

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Bull. 16, Biological Survey, U. S. Dept. Agriculture—Table II.

U. S. DEPARTMENT OF AGRICULTURE

CLOSE SEASONS FOR GAME IN MARYLAND, DISTRICT OF COLUMBIA, VIRGINIA, AND NORTH CAROLINA, 1901

[Compiled by T. S. Palmer and H. W. Olds.]

The following table shows the close seasons for the more important game in each county of Maryland, Virginia, and North Carolina. It is designed to bring together in convenient form the numerous local seasons that prevail in these States, but in order to avoid making it too large, unimportant species and those not protected by the general game laws have been necessarily omitted. In its preparation much help has been derived from the Synopsis of the Game Laws of North Carolina, published by the State Board of Agriculture, while the laws of Maryland have been compiled directly from the abstract prepared by the State Game Warden and the Game and Fish Protective Association of Maryland.

The first date of the close season and the first date of the open season are given, so that open seasons may be readily found by reversing the dates. Thus, if the close season is Dec. 1-Sept. 1, the open season will be Sept. 1-Dec. 1.

MARYLAND.[1]

Counties.	Squirrel.	Rabbit.	Quail (Partridge).	Grouse (Pheasant).	Wild Turkey.	Reedbird.	Woodcock.	Plover, Snipe.	Rail (Ortolan).	Duck.
Allegany		Jan. 1-Oct. 15	Jan. 1-Oct. 15	Jan. 1-Sept. 1	Jan. 1-Oct. 15	Nov. 1-Sept. 1	Jan. 1-July 1	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Anne Arundel	Dec. 1-Sept. 1	Dec. 25-Nov. 15	Dec. 25-Nov. 15	Dec. 25-Nov. 15		Nov. 1-Sept. 1	Dec. 25-Nov. 15	May 1-Aug. 15	Nov. 1-Sept. 1[2]	Apr. 10-Nov. 1[3]
Baltimore	Dec. 1-Sept. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Dec. 25-Nov. 1[4]	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Baltimore City	Dec. 1-Sept. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Oct. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Dec. 25-Nov. 1[4]	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Calvert	Dec. 1-Sept. 1	Dec. 25-Nov. 1	Jan. 10-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Dec. 25-Nov. 1[4]	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Caroline	Dec. 25-Nov. 15	Dec. 25-Nov. 15	Dec. 25-Nov. 15	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Feb. 1-July 4	May 1-Aug. 15	Jan. 1-Sept. 20	Apr. 1-Sept. 20
Carroll	Dec. 1-Sept. 1	Dec. 25-Nov. 10	Dec. 25-Nov. 10	Dec. 25-Nov. 10		Nov. 1-Sept. 1	Dec. 25-July 15	May 1-Sept. 1	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Cecil	Dec. 1-Sept. 1	Jan. 10-Nov. 1	Jan. 10-Nov. 1	Feb. 1-Sept. 5		Feb. 1-Sept. 5	Jan. 1-June 10	May 1-Aug. 15	Feb. 1-Sept. 5	Apr. 10-Nov. 1[5]
Charles	Dec. 1-Sept. 1	Jan. 15-Oct. 15	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Feb. 24-July 4	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Dorchester	Dec. 1-Sept. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Feb. 1-Nov. 10	Feb. 1-Nov. 10	Nov. 1-Sept. 1	Jan. 15-July 1	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1[5]
Frederick	Nov. 1-June 15	Dec. 15-Nov. 15	Dec. 15-Nov. 15[6]	Dec. 15-Nov. 15[6]	Jan. 15-Nov. 15	Nov. 1-Sept. 1	Dec. 25-Nov. 1[4]	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Garrett		Feb. 1-Nov. 1	Dec. 1-Nov. 1	Dec. 1-Nov. 1	Dec. 1-Nov. 1	Nov. 1-Sept. 1	Dec. 1-Nov. 1	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Harford	Dec. 1-Sept. 1	Dec. 15-Nov. 15	Dec. 15-Nov. 15	Dec. 15-Nov. 15		Dec. 15-Sept. 1	Aug. 10-June 10	May 1-Aug. 15	Dec. 15-Sept. 1	Apr. 10-Nov. 1[5]
Howard	Oct. 1-May 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Dec. 25-Nov. 1[4]	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Kent	At all times	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	At all times	Nov. 1-Sept. 1	Dec. 25-Nov. 1	Dec. 25-Aug. 1[7]	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Montgomery	Dec. 15-Aug. 1	Dec. 20-Nov. 1	Dec. 20-Nov. 1	Jan. 1-Sept. 1	Feb. 1-Nov. 1	Nov. 1-Sept. 1	Jan. 1-July 1	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Prince George	Dec. 1-Sept. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Dec. 25-Nov. 1[8]	May 1-Aug. 15	Nov. 1-Sept. 1[2]	Apr. 10-Nov. 1
Queen Anne	Dec. 1-Sept. 1	Dec. 25-Nov. 15	Dec. 25-Nov. 15	Dec. 25-Nov. 10		Nov. 1-Sept. 1	Feb. 1-July 4	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Saint Mary	Dec. 1-Sept. 1	Jan. 15-Sept. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 10		Nov. 1-Sept. 1	Feb. 24-July 4	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Somerset	Dec. 1-Sept. 1	Jan. 1-Nov. 10	Jan. 20-Nov. 20	To Nov. 10, 1903	Feb. 1-Nov. 10	Nov. 1-Sept. 1	Jan. 1-June 15	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 1-Oct. 1[9]
Talbot	Dec. 1-Sept. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Dec. 25-Nov. 1	Dec. 25-Nov. 1	Nov. 1-Sept. 1	Jan. 1-July 4	May 1-Aug. 15	Jan. 1-Sept. 10	May 1-Oct. 10[9]
Washington	Dec. 1-Sept. 15[4]	Dec. 25-Oct. 20	Dec. 25-Oct. 20	Dec. 25-Aug. 12	Jan. 15-Nov. 1	Nov. 1-Sept. 1	Dec. 25-July 12	May 1-Aug. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1
Wicomico	Feb. 15-Sept. 1	Jan. 15-Nov. 1	Jan. 15-Nov. 15	Feb. 1-Nov. 10	Feb. 1-Nov. 10	Nov. 1-Sept. 1	Feb. 1-June 15	Jan. 15-Nov. 15	Nov. 1-Sept. 1	Apr. 10-Nov. 1[9]
Worcester	Dec. 1-Sept. 1	Jan. 15-Nov. 15	Jan. 15-Nov. 15	Feb. 1-Nov. 10	Feb. 1-Nov. 10	Nov. 1-Sept. 1	To June 15, 1902		Nov. 1-Sept. 1	Apr. 10-Nov. 1[9]

[1] Deer close season: Allegany, Jan. 1-Aug. 1; Garrett, to Sept. 30, 1906; Washington, Jan. 15-Nov. 1.
[2] Except on marshes of Patapsco, Potomac, or Patuxent bordering on Prince George or Anne Arundel counties, Nov. 1-Sept. 5.
[3] Except on Magothy, South, and Severn rivers, May 1-Oct. 1.
[4] Except month of July.
[5] Special local provisions.
[6] Ch. 587, Acts 1900.
[7] Plover only; snipe season, June 1-Mar. 15.
[8] Except June 15 to Sept. 1.
[9] Wood (or summer) duck as follows: Somerset, Jan. 1-Sept. 1; Talbot and Wicomico, Jan. 1-Sept. 10; Worcester, Mar. 1-Sept. 1.

DISTRICT OF COLUMBIA.[1]

Deer.	Squirrel.	Rabbit.	Quail (Partridge).	Grouse (Pheasant).	Wild Turkey.	Reedbird.	Woodcock.	Plover, Snipe.	Rail (Ortolan).	Duck.
Jan. 1-Sept. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Mar. 15-Nov. 1	Dec. 20-Nov. 1	Dec. 20-Nov. 1	Feb. 1-Sept. 1	Jan. 1-July 1	Apr. 1-Sept. 1	Feb. 1-Sept. 1	Apr. 1-Sept. 1

[1] Prairie chicken or pinnated grouse (sale), Mar. 15-Sept. 1; Dove, at all times; Goose, brant, Apr. 1-Sept. 1; Marsh blackbird and game birds not previously mentioned, Feb. 1-Sept. 1.

VIRGINIA.[1]

Counties.	Deer.	Quail (Partridge).	Grouse (Pheasant).	Wild Turkey.	Woodcock.
Accomac	Jan. 1-Aug. 15	Jan. 15-Nov. 15	Feb. 1-Sept. 15	At all times	Jan. 1-July 1
Albemarle	Jan. 1-Aug. 15	Jan. 1-Nov. 1	Jan. 15-Nov. 1	Jan. 15-Nov. 1	Apr. 1-Nov. 1
Alexandria	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Jan. 1-July 1
Alleghany	Dec. 25-Oct. 20	Dec. 25-Nov. 1	Dec. 25-Oct. 15	Dec. 25-Oct. 15	Dec. 31-Oct. 1
Amelia	Jan. 15-Sept. 1	Feb. 1-Oct. 15	Feb. 1-Oct. 1	Feb. 15-Oct. 1	
Amherst	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Appomattox					
Augusta	Dec. 25-Oct. 20	Dec. 25-Nov. 1	Dec. 25-Oct. 15	Dec. 25-Oct. 15	Dec. 31-Oct. 1
Bath	Dec. 25-Oct. 20	Dec. 25-Nov. 1	Dec. 25-Oct. 15	Dec. 25-Oct. 15	Dec. 31-Oct. 1
Bedford	Jan. 1-Aug. 15	Jan. 15-Nov. 1	Feb. 1-Sept. 15	Mar. 15-Nov. 1	Apr. 1-Nov. 1
Bland	Jan. 1-Nov. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Botetourt	Dec. 25-Oct. 20	Dec. 25-Nov. 1	Dec. 25-Oct. 15	Dec. 25-Oct. 15	Apr. 1-Nov. 1
Brunswick	Feb. 1-Sept. 1	Feb. 1-Oct. 15		Mar. 1-Oct. 20	
Buchanan	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Buckingham	Jan. 1-Aug. 15	Feb. 15-Oct. 15	Feb. 15-Oct. 15	Feb. 15-Oct. 15	Apr. 1-Nov. 1
Campbell	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Caroline	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1
Carroll	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Charles City	Jan. 15-Sept. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Oct. 1	Apr. 1-Nov. 1
Charlotte	Feb. 1-Sept. 1	Feb. 1-Oct. 15	Feb. 1-Oct. 1	Feb. 1-Oct. 1	Apr. 1-Nov. 1
Chesterfield	Feb. 1-Sept. 1	Feb. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Clarke	Jan. 1-Aug. 15	Dec. 25-Oct. 31	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Craig	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Culpeper	Feb. 1-Aug. 31	Jan. 15-Nov. 1	Jan. 15-Nov. 1	Jan. 15-Nov. 1	Feb. 1-July 1
Cumberland		Feb. 1-Oct. 15	Feb. 15-Oct. 15	Feb. 15-Oct. 15	
Dickenson	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Dinwiddie		Feb. 1-Nov. 1		Feb. 1-Nov. 1	
Elizabeth City	Jan. 1-Aug. 15	Feb. 1-Nov. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Feb. 1-Nov. 15
Essex	Feb. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 1-Nov. 1	Apr. 1-Nov. 1
Fairfax	Dec. 25-Sept. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-July 4
Fauquier	Jan. 1-Aug. 15	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Apr. 1-Nov. 1
Floyd	Jan. 1-Aug. 15	Jan. 15-Oct. 1	Mar. 1-Oct. 1	Mar. 1-Oct. 1	Apr. 1-Nov. 1
Fluvanna	Jan. 1-Aug. 15	Jan. 15-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Franklin	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Frederick	Dec. 15-Sept. 15	Dec. 15-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Feb. 1-July 1
Giles	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Gloucester	Jan. 1-Aug. 15	Jan. 15-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Nov. 1	Apr. 1-Nov. 1
Goochland	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Grayson	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Greene	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Greenesville	Jan. 15-Aug. 1	Feb. 15-Nov. 1		Feb. 15-Oct. 15	
Halifax	Jan. 15-Aug. 1	Feb. 15-Oct. 15	Feb. 1-Sept. 15	Feb. 15-Oct. 15	Apr. 1-Nov. 1
Hanover	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1
Henrico	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1
Henry	Jan. 15-Aug. 1	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Oct. 15	Apr. 1-Nov. 1
Highland	Dec. 25-Oct. 20	Dec. 25-Nov. 1	Dec. 25-Oct. 15	Dec. 25-Oct. 15	Apr. 1-Nov. 1
Isle of Wight	Jan. 1-Aug. 15	Feb. 15-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Sept. 15	Apr. 1-Nov. 1
James City	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
King and Queen	Feb. 1-Aug. 31	Feb. 15-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Oct. 15	Feb. 1-July 1
King George	Jan. 1-Aug. 15	Jan. 5-Nov. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Jan. 1-Oct. 1
King William	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 1-Nov. 1	Apr. 1-Nov. 1
Lancaster	Feb. 1-Oct. 1	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Lee	Jan. 1-Aug. 15	Jan. 15-Nov. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Loudoun	Jan. 1-Aug. 15	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-June 15
Louisa	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Lunenburg					
Madison	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Mathews	Jan. 1-Aug. 15	Jan. 15-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Mecklenburg		Mar. 1-Oct. 15		Mar. 1-Oct. 15	
Middlesex	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Montgomery	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Jan. 1-Oct. 15	Jan. 1-Oct. 15	Apr. 1-Nov. 1
Nansemond	Jan. 1-Aug. 15	Feb. 15-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Sept. 15	Apr. 1-Nov. 1
Nelson	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
New Kent	Jan. 15-Sept. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Oct. 1	Apr. 1-Nov. 1
Norfolk	Jan. 1-Aug. 15	Feb. 1-Nov. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Northampton	Jan. 1-Aug. 15	Jan. 15-Nov. 15	Feb. 1-Sept. 15	At all times	Jan. 1-July 1
Northumberland	Feb. 1-Oct. 1	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Nottoway	Jan. 15-Sept. 1	Feb. 1-Oct. 15		Feb. 15-Oct. 1	
Orange	Feb. 1-Aug. 31	Jan. 15-Nov. 1	Jan. 15-Nov. 1	Jan. 15-Nov. 1	Feb. 1-July 1
Page	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Patrick	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Pittsylvania	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Nov. 1	Apr. 1-Nov. 1
Powhatan	Jan. 1-Aug. 15	Feb. 15-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Prince Edward	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Mar. 1-Oct. 15	Mar. 1-Oct. 15	Apr. 1-Nov. 1
Prince George	Jan. 15-Sept. 1	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Oct. 1	Apr. 1-Nov. 1
Princess Anne	Feb. 15-Sept. 15	Feb. 1-Nov. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Prince William	Jan. 1-Aug. 15	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Apr. 1-Nov. 1
Pulaski	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Rappahannock	Jan. 1-Aug. 15	Jan. 1-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Richmond	Feb. 1-Oct. 1	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Roanoke	Jan. 1-Aug. 15	Jan. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Apr. 1-Nov. 1
Rockbridge	Dec. 25-Oct. 20	Dec. 25-Nov. 1	Dec. 25-Oct. 15	Dec. 25-Oct. 15	Dec. 31-Oct. 1
Rockingham	Dec. 1-Oct. 15	Dec. 15-Nov. 1	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Russell	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Scott	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 25	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Shenandoah	Dec. 15-Sept. 15	Jan. 1-Nov. 1	Jan. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-July 1
Smyth	Jan. 1-Nov. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Mar. 15-Nov. 1	Apr. 1-Nov. 1
Southampton	Jan. 15-Sept. 1	Feb. 15-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Nov. 15	Apr. 1-Nov. 1
Spottsylvania	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Feb. 1-Nov. 1	Apr. 1-Nov. 1
Stafford	Jan. 1-Aug. 15	Jan. 5-Nov. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Jan. 1-Oct. 1
Surry	Jan. 15-Sept. 1	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Oct. 1	Apr. 1-Nov. 1
Sussex	Jan. 15-Aug. 1	Feb. 15-Nov. 1		Feb. 15-Oct. 15	
Tazewell	Jan. 1-Nov. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Warren	Jan. 1-Aug. 15	Dec. 25-Oct. 31	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Warwick	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1
Washington	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Mar. 15-Nov. 1	Apr. 1-Nov. 1
Westmoreland	Jan. 1-Aug. 15	Feb. 1-Nov. 1	Feb. 1-Sept. 15	Feb. 15-Nov. 15	Apr. 1-Nov. 1
Wise	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Feb. 1-Sept. 15	Apr. 1-Nov. 1
Wythe	Jan. 1-Nov. 15	Jan. 1-Nov. 1	Feb. 1-Sept. 1	Jan. 15-Oct. 15	Apr. 1-Nov. 1
York	Jan. 1-Aug. 15	Jan. 1-Oct. 15	Feb. 1-Sept. 15	Jan. 15-Oct. 15	Apr. 1-Nov. 1

[1] Rabbit: Accomac, Northampton, Jan. 15-Nov. 15; Alexandria, Jan. 1-Oct. 1; Amelia, Charlotte, Greenesville, Spottsylvania, Sussex, Feb. 1-Oct. 1; Buckingham, Cumberland, Feb. 15-Oct. 15; Caroline, Essex, Hanover, Henrico, King William, Feb. 1-Nov. 1; Chesterfield, Feb. 1-Sept. 1; Culpeper, Orange, Jan. 15-Nov. 1; Elizabeth City, Feb. 1-Nov. 15; Fairfax, Fauquier, Loudoun, Prince William, Jan. 1-Nov. 1; Halifax, Feb. 1-Oct. 15; Nottoway, Jan. 1-Sept. 1; Shenandoah, Mar. 1-Nov. 1; Stafford, Feb. 1-Sept. 15.

Wild fowl, May 1-Sept. 1 in entire State except in the following counties where there is no close season: Amelia, Appomattox, Brunswick, Cumberland, Dinwiddie, Greenesville, Lunenburg, Mecklenburg, Northumberland.

NORTH CAROLINA.[2]

Counties.	Deer.	Quail (Partridge).	Wild Turkey.	Dove.
Alamance	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Alexander	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Alleghany	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Anson	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Ashe	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Beaufort		Mar. 20-Oct. 15	Mar. 15-Nov. 1	Mar. 20-Oct. 15
Bertie	Feb. 1-Oct. 1	Mar. 1-Nov. 1	Mar. 1-Nov. 1	Mar. 1-Nov. 1
Bladen	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Brunswick	Feb. 15-July 15	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Buncombe	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Burke	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Cabarrus	Jan. 1-Oct. 1	Mar. 1-Nov. 15	Mar. 1-Nov. 15	Mar. 15-Nov. 15
Caldwell	Until Mar., 1905	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Camden		Mar. 1-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Carteret (Bogue Banks).		Until Mar. 1905	Until Mar. 1905	
Caswell	Until Feb. 1907	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Catawba	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Chatham	Jan. 1-Oct. 1	Mar. 1-Nov. 1	Mar. 1-Nov. 1	Mar. 15-Nov. 1
Cherokee	Feb. 15-Aug. 15		May 10-Oct. 10	
Chowan		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Clay	Until 1902			
Cleveland	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Columbus	Jan. 1-Oct. 1[3]			
Craven		Mar. 15-Nov. 1		
Cumberland	Jan. 1-Oct. 1	Mar. 15-Nov. 1		
Currituck	Jan. 1-Oct. 1[4]	Mar. 1-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Dare	Mar. 1-Oct. 15	Mar. 1-Oct. 15		
Davidson	Jan. 1-Oct. 1	Mar. 1-Nov. 15	Mar. 1-Nov. 15	Apr. 1-Oct. 15
Davie	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Duplin		Mar. 15-Nov. 1		
Durham	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Edgecombe		Mar. 15-Nov. 1	Mar. 15-Nov. 1	
Forsyth	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Franklin	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Gaston	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Gates		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Graham	Feb. 15-Aug. 15			
Granville	Jan. 1-Oct. 1	Mar. 1-Oct. 15	Mar. 1-Oct. 15	Mar. 1-Oct. 15
Greene		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Guilford	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Halifax		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Harnett	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Haywood	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Henderson	Jan. 1-Oct. 1	Feb. 15-Nov. 15	Feb. 15-Nov. 15	Mar. 15-Nov. 1
Hertford		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Hyde	Feb. 15-Aug. 1[5]	Mar. 20-Oct. 15	Mar. 15-Nov. 1	
Iredell	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Jackson	Feb. 15-Aug. 15	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Johnston		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Jones				
Lenoir	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Lincoln	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
McDowell	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Macon	Until 1902		May 1-Oct. 15	
Madison	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Martin		Mar. 15-Nov. 1	May 1-Jan. 1	Mar. 15-Nov. 1
Mecklenburg	Jan. 1-Oct. 1	Jan. 10-Dec. 1	Feb. 1-Nov. 15	Feb. 1-Nov. 15
Mitchell	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Montgomery	Until 1906	Mar. 1-Nov. 15	Mar. 1-Nov. 15	Mar. 1-Nov. 15
Moore	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	
Nash	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
New Hanover	Jan. 1-Oct. 1	Apr. 1-Oct. 15	Mar. 15-Nov. 1	Apr. 1-Oct. 15
Northampton		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Onslow				
Orange	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Pamlico	Mar. 1-Sept. 1	Mar. 1-Sept. 1	Mar. 1-Sept. 1	
Pasquotank		Mar. 1-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Pender	Feb. 1-Oct. 1	Mar. 15-Nov. 1	Feb. 1-Oct. 1	Mar. 15-Nov. 1
Perquimans		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Person	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Pitt		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Polk	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Randolph	Jan. 1-Oct. 1	Mar. 1-Nov. 15	Feb. 1-Dec. 1	Mar. 15-Nov. 1
Richmond	Feb. 15-Aug. 15	Apr. 1-Oct. 15	Apr. 1-Oct. 15	Apr. 1-Oct. 15
Robeson	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Rockingham	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Rowan	Jan. 1-Oct. 1	Feb. 2-Dec. 1	Feb. 2-Dec. 1	Feb. 2-Dec. 1
Rutherford	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Sampson	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Scotland	Feb. 15-Aug. 15	Apr. 1-Oct. 15	Apr. 1-Oct. 15	Apr. 1-Oct. 15
Stanly	Jan. 1-Oct. 1	Mar. 15-Nov. 1	At all times	Mar. 15-Nov. 1
Stokes	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Surry	Jan. 1-Oct. 1	Feb. 1-Dec. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Swain	Feb. 15-Aug. 15			
Transylvania	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Tyrrell	Feb. 1-Oct. 15	Mar. 1-Oct. 15		
Union	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Vance	Jan. 1-Oct. 1	Mar. 15-Oct. 15	Mar. 15-Oct. 15	Mar. 15-Oct. 15
Wake	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Warren	Jan. 1-Oct. 1	Mar. 15-Oct. 10	Mar. 15-Oct. 10	Mar. 15-Oct. 10
Washington		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Watauga	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Wayne		Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Wilkes	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Wilson		Feb. 1-Nov. 15	Feb. 1-Nov. 15	
Yadkin	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1
Yancey	Jan. 1-Oct. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1	Mar. 15-Nov. 1

[2] Squirrel: Bertie, Martin, Mar. 1-Aug. 15; Pamlico, Mar. 1-Sept. 1; Pasquotank, Mar. 1-Oct. 1.

Opossum: Alamance, Anson, Caswell, Chatham, Franklin, Gaston, Guilford, Halifax, Mecklenburg, Moore, Orange, Wake, Warren, Feb. 1-Oct. 1; Pamlico, Mar. 1-Sept. 1.

Wild fowl: Brunswick, New Hanover, Mar. 10-Nov. 1; Carteret, Jan. 1-Dec. 1; Currituck, Apr. 1-Nov. 10; Henderson, Feb. 15-Nov. 15.

[3] Lake Waccamaw.

[4] On North River side of Poplar Branch Township, Mar. 1-Sept. 21.

[5] Except near Mattamuskeet Lake.

U. S. DEPARTMENT OF AGRICULTURE
DIVISION OF BIOLOGICAL SURVEY—BULLETIN No. 17
C. HART MERRIAM, Chief

BIRDS OF A MARYLAND FARM

A LOCAL STUDY OF ECONOMIC ORNITHOLOGY

BY

SYLVESTER D. JUDD, Ph. D.
ASSISTANT, BIOLOGICAL SURVEY

PREPARED UNDER THE DIRECTION OF
Dr. C. HART MERRIAM
CHIEF OF BIOLOGICAL SURVEY

1862 1889

WASHINGTON
GOVERNMENT PRINTING OFFICE
1902

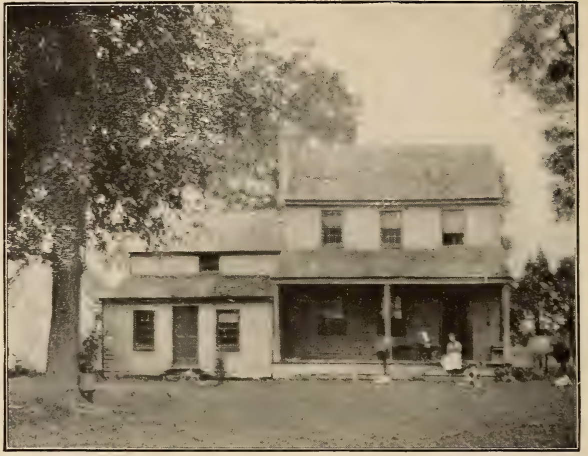

FIG. 1.—DWELLING HOUSE ON BRYAN FARM.

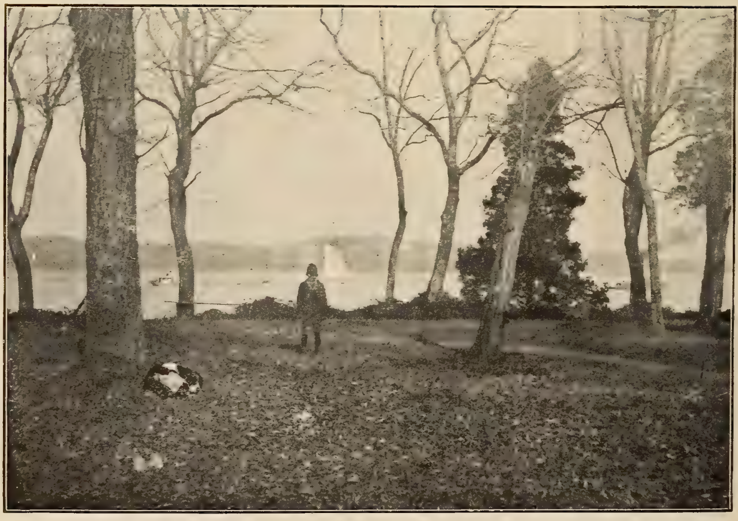

FIG. 2.—VIEW OF THE POTOMAC FROM BRYAN HOMESTEAD, SHOWING FEEDING PLACES OF GULLS, DUCKS, AND OTHER WATERFOWL.

Mount Vernon in the distance.

U. S. DEPARTMENT OF AGRICULTURE

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
Washington, D. C., July 5, 1902.

SIR: I have the honor to transmit herewith, for publication as Bulletin 17 of the Biological Survey, a report on the Birds of a Maryland Farm, the same being a local study in economic ornithology by one of my assistants, Dr. Sylvester D. Judd. Acknowledgment is made to the Entomologist for assistance in the determination of some of the insects, as well as for the use of certain illustrations.

Respectfully,
C. HART MERRIAM,
Chief, Biological Survey.

Hon. JAMES WILSON,
Secretary of Agriculture.

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BIRDS OF A MARYLAND FARM.

I.—INTRODUCTION.

The principal method used by the Biological Survey in investigating the food habits of birds is examination of the contents of stomachs, the material for which is obtained from all parts of the United States. In the case of each species the separate data accumulated by examining as many stomachs as possible are tabulated and show the food of the bird in question to consist of various proportions of certain elements. This method, combining as it does data from many parts of the country, gives results necessarily somewhat composite, but certainly trustworthy, and shows to what extent a bird eats fruit, grain, or insects, thus furnishing a comprehensive and detailed knowledge of food habits that probably could not be obtained by any other available means.

In a study of local conditions, however, general conclusions regarding the utility of a bird based on data from perhaps a score or more of States may sometimes require modification. For instance, from a study of the smaller herons from material collected from North, South, East, and West the conclusion would be drawn that they live on food of no economic value and are therefore unimportant species. But a study of these birds in the State of Louisiana alone shows them to be highly useful, for here they prey on crayfish, which, by tunneling through the levees, cause great damage to crops by flood. In similar ways the relations of birds to a certain locality or particular farm can not always be exactly tested by conclusions drawn from a large range of territory. The exact damage to crops is not revealed by stomach examination. A bird may have punctured several grapes in each of a hundred clusters and yet betray to the microscope no sign of its vicious habit. On the other hand, a bird may be condemned as injurious because it is found to have eaten berries or grain, although, as a matter of fact, it has taken the berries from wild plants and gleaned the grain after harvest. Then, too, the material examined at the Department is not usually accompanied by notes of the available supply of fruits, seeds, and insects present at the places where the birds were collected. Such information would be a significant supplement to the results of stomach examination. The faults of a fruit-eating bird might be condoned if it were found to rob the garden and orchard only when the thicket and pasture were barren. And the value of birds as insect destroyers in any particular locality can be understood only when one knows just what crops of the region are infested, and the identity and importance of the pest by which each is chiefly attacked; for only then can one learn which birds select the worst pests and destroy them in the largest proportion.

With a view to ascertaining how far local conditions might modify the details of general conclusions based on data from widely separated regions, a study of the food habits of the birds on a particular farm was undertaken. From July 30, 1895, to July 24, 1902, visits were made at frequent intervals and including every month of the year except January. To obtain an idea of the available food supply, the insects, berries, and seeds found on the place were collected; the condition of the crops and the insects infesting them were noted; detailed observations of the birds' food habits were made in the field, and the stomachs of 698 birds were collected and examined, 53 being those of English sparrows and the remainder (645) those of native species. One of the most serious disadvantages attending the work is that from such a limited area one can not examine stomachs enough to get a thorough knowledge of the food of each species, and is often compelled to rely, for the general idea of the food, on conclusions drawn from material collected elsewhere. Still, such information, supplemented by the knowledge gained from local stomach collections and field notes, has made it possible in most cases to determine whether a given species is, on the whole, helpful or harmful to the farm in question.

TOPOGRAPHY OF BRYAN FARM.

The farm chosen for this investigation is the Bryan farm, at Marshall Hall, Md., on the south bank of the Potomac, 15 miles from Washington, directly opposite Mount Vernon, Va. (see Pl. I, frontispiece, fig. 2). The former owner of the farm, Mr. O. N. Bryan, was an enthusiastic collector of birds, plants, and Indian implements, and was known to many Washington scientists. On his death, in 1892, his collections were given to the National Museum. The farm passed to his nephew, Mr. George R. Bryan, to whom the author is indebted for permission to conduct these investigations on the place, and for cordial cooperation and uniform courtesy throughout their course. The farm contains about 230 acres, of which 150 is cultivated and most of the remaining 80 covered with timber, principally hardwood interspersed with pine. The arable land, forming as it does nearly two-thirds of the farm, is all in one tract (see map, Pl. II). Its western limit is a straight line of fence separating it from the next farm; its northern boundary, almost twice as long, is the nearly straight shore of the Potomac River, which here flows from east to west. A small bay, formed by an indentation of the river shore (Pl. III, fig. 1), a calamus swamp, 200 yards long (Pl. VII, fig. 1), which drains into the bay, and a tract of woodland (Pl. XVI, fig. 2) form the eastern and southern boundaries. The uncultivated part of the farm consists of timber tracts, level except about the swamp, where the land rises on two sides, the eastern rise forming a little wooded hill more than 100 feet above the river (Pl. VII, fig. 2).

The cultivated area is a level, alluvial bench extending back from the river a half mile to foothills (Pl. III, fig. 2). It is divided into five approximately equal lots, two along the southern or woodland boundary and three along the northern or river boundary. A straight line of fence parallel to the river separates the three river lots from the two inland lots. The river tract is rectangular, about three times as long as broad, and extends east—that is, up river--several hundred yards farther than the inland tract. A bushy draining ditch, which will be designated throughout this paper by the local name Persimmon Branch, stretches lengthwise through the middle of this area from the calamus swamp to the lower or southwest corner of the farm, where it empties into the river by a swampy, timbered outlet. Persimmon Branch is joined not far from its river mouth by a tributary—locally known as Partridge Branch—that drains the western inland lot. The other inland lot has no ditch, and part of it is often wet; the side toward the swamp washes badly during heavy rains. It has been found convenient to designate these lots by numbers, the three along the river being numbered 1, 2, and 3 and the others 4 and 5 (see map, Pl. II).

The farm meets the river in a precipitous, tree-fringed bluff from 20 to 30 feet high, which at low tide has a strip of sandy shore (Pl. IV, fig. 1). All the buildings but one stand at intervals on a road running along the brink of the bluff. In the middle of the river front of lot 1 are the house, surrounded by a yard with a paling fence and shaded by great locusts, and a horse barn with its corn house (see Pl. I, frontispiece, fig. 1). In lot 2, touching the line dividing it from lot 1, is a cow barn, and at the middle of lot 2 is a negro cabin. A storage barn stands several hundred yards south of the cabin, at the northwest corner of lot 4 (see map, Pl. II).

The staple products of the farm are corn, wheat, and tobacco in irregular rotation with timothy, which furnishes the winter supply for some half dozen cows and about as many horses. In recent years market gardening has been attempted on a small scale, in the light, sandy part of lot 3, between Persimmon Branch and the river. It is seldom that even two-thirds of the five lots is under cultivation at once. Of the remaining third or more, 5 to 10 acres is usually devoted to timothy, and the rest is worn-out mowing lands and weedy old cornfields (Pl. V, fig. 1). Broom-sedge, which in spring makes good pasturage but later is refused by stock, comes into these cornfields after the first year, and, in time, into the timothy fields (Pl. XIV, fig. 3). Of the cultivated area, as much as 30 acres is sometimes devoted to corn. A smaller acreage is given to wheat, and still less to tobacco

(Pl. VIII, fig. 1), which, however, is the most steady in price, and during good years the most profitable crop. Vegetables, strawberries, pears, grapes, and quinces are grown in an inclosed kitchen garden adjoining the dooryard on its upper side. Beyond is a hog lot of several acres, with a small wooded gully leading down to the river and affording shade to the dozen or more hogs that range there (Pl. IV, fig. 2).

DISTRIBUTION OF BIRDS.

After this preliminary account of the topography and the products of the farm we may consider the birds and their relation to the crops. The whole farm with its arable land, river shore, steep bluff, and low calamus swamp bordered on one side by the high hill and on another by the extent of level forest, presents conditions so varied as to attract many different kinds of birds. The actual distribution of the various species is of great importance. Other things being equal, those that live on the arable land, and thus have the best opportunity to check the work of injurious plants and insects, may be expected to do the greatest good, while such as frequent only the swamp or the remote woodland have little effect on crops.

BIRDS THAT FEED IN OPEN FIELDS.

Meadowlark.—The meadowlark (fig. 1) is a good example of species of the former class. It was found breeding in all the lots, usually in a timothy field or an old weedy cornfield (Pl. V, fig. 1), and was present in numbers sufficient to do much good. In late summer flocks of 20 were often seen, and in November usually more than twice that number. These birds in their feeding completely covered the open parts of the lots, and came fearlessly up to the barns and foraged within a stone's throw of the house.

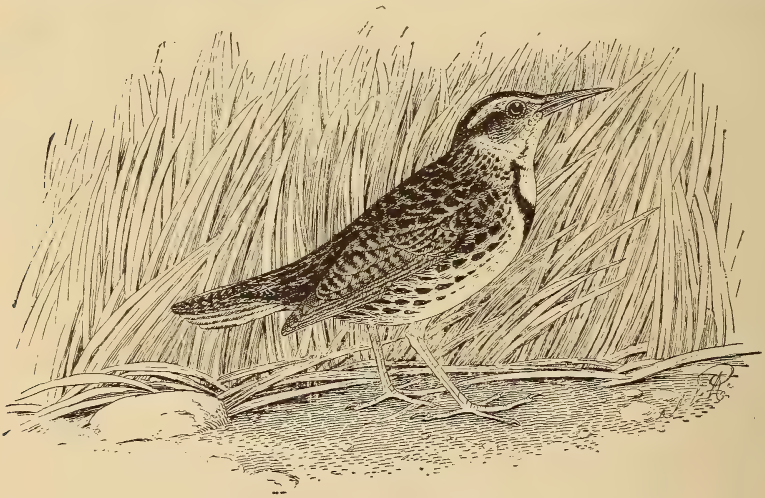
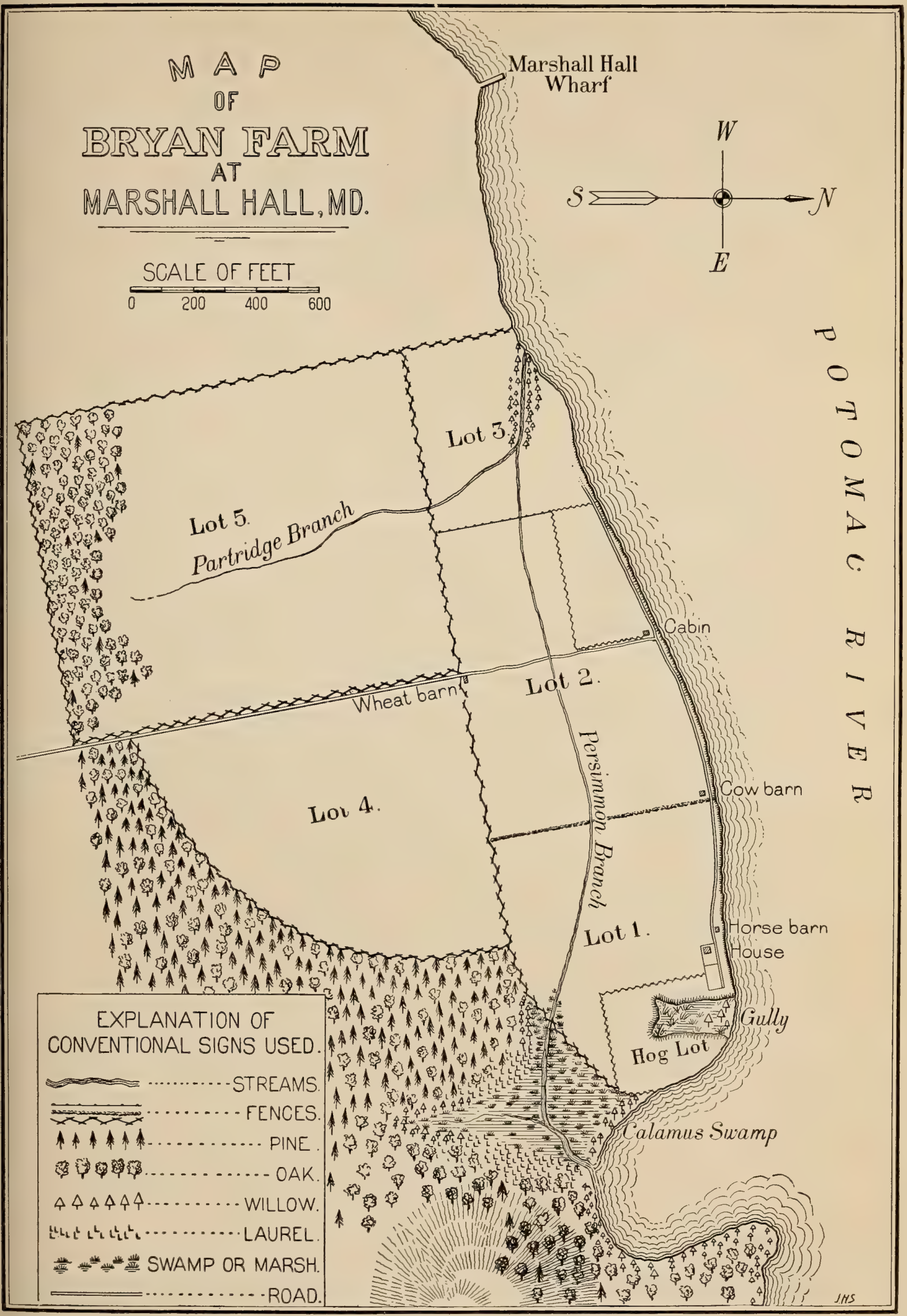


Fig. 1.—Meadowlark.


MAP
OF
BRYAN FARM
AT
MARSHALL HALL, MD.
SCALE OF FEET
0
200
400
600
Marshall Hall Wharf
W
S
N
E
POTOMAC RIVER
Lot 3.
Lot 5.
Partridge Branch
Cabin
Wheat barn
Lot 2.
Persimmon Branch
Lot 4.
Cow barn
Lot 1.
Horse barn
House
Gully
Hog Lot
Calamus Swamp
EXPLANATION OF CONVENTIONAL SIGNS USED.
STREAMS.
FENCES.
PINE.
OAK.
WILLOW.
LAUREL.
SWAMP OR MARSH.
ROAD.
JHS

MAP OF BRYAN FARM, WHERE THE INVESTIGATIONS WERE CARRIED ON.

Grasshopper Sparrow.—The grasshopper sparrow is even more exclusively a bird of the open land than the meadowlark, for it seldom flies up from the fields to perch in trees. During the period of observation it happened to breed for the most part in lots 1, 2, and 3, choosing timothy fields or pastures (Pl. V, fig. 2), or weedy, briery cornfields. It was often seen feeding in lot 5, but was seldom observed in lot 4, probably because the rotation of crops in that lot did not happen to provide favorable grass land.

Bobwhite.—The bobwhite—the quail of the North and the partridge of the South—is also a bird of the open, though it has the habit of flying to cover when alarmed. Bobwhites were frequently found in coveys of a dozen or more in lots 4 and 5. On being flushed they sought shelter in the neighboring oak woods, where they spent much time, especially in fall and winter. In summer they lived chiefly in the open lots of the farm, where they nested. From the time that corn was 3 feet high until it was cut, they used it for cover. They were not as closely confined to grass land as the grasshopper sparrows, but foraged in every lot, and appeared to come in closer contact with crops than did any other species on the farm.

Mourning Dove.—Among the birds of the first class may also be included mourning doves (fig. 2) and crows, which, though not nesting on the arable land, were always to be seen feeding there. The doves nested in small pines in the more open parts of the adjacent woods. As their food is weed seed and waste grain gleaned on stubble-

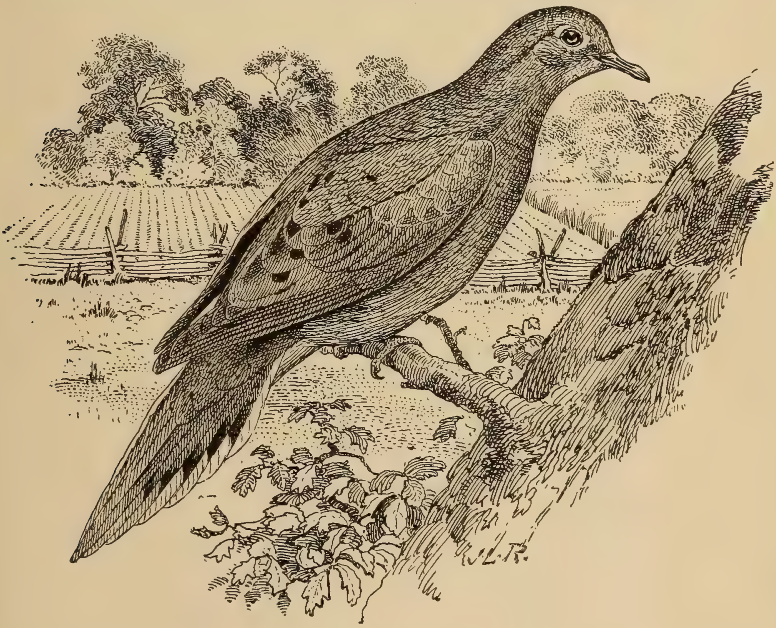


Fig. 2.—Mourning dove. (The background of this picture is typical of the Bryan farm.)

fields, they avoided fields of timothy and broom-sedge and areas under actual cultivation and foraged in waste corn land and on wheat stubble, where, for a time after harvest, they obtained wheat and, later, abundant seeds of ragweed. They were often observed in lots 2 and 3 feeding on the seeds of oxalis, spurge, and other weeds that grew among old cornstalks, and in fall worked among the rank weedy growths that overran the truck land between Persimmon Branch and the river; but they were more often seen in lot 4, which was near the woods where they nested, and which furnished them wheat stubble or new corn stubble with their favorite pigeon-grass. At harvest time and later the flock of doves numbered a score or more. Their feeding grounds changed from time to time according to the rotation of crops. They did not approach the buildings with as much confidence as did the meadowlarks and the bobwhites, and thus lost some effectiveness as weed-seed destroyers.

Crows.—Both the fish crow and the common crow occurred on the farm, but the latter species was much the more abundant. Crows nested in the scrub pines (*Pinus virginiana*) which grow among the white oaks and red oaks bounding lot 4, and bred also in the woods across the calamus swamp, where, in addition to the trees just mentioned, there is a sprinkling of cedar, sycamore, and holly. Their favorite feeding grounds in spring were newly plowed fields where May-beetles and cutworms were to be found. Even when such fields were close to buildings the crows, though usually shyer than the doves, watched for opportunities to visit them, and many times were noticed in the early morning stalking along the furrows, sometimes within a few rods of the cabin, cow barn, and storage barn. As they did not often enter the timothy fields, which were tenanted by meadowlarks and grasshopper sparrows, and as these, on the other hand, were seldom seen on plowed land and among the hoed crops where the crows constantly foraged, the work of the latter was, in a measure, complementary to that of the former.

Blackbirds.—The crow blackbird, although it did not nest on the farm, was a frequent visitor. During the breeding season its favorite haunt was the cherry trees along the river bluff, but in spring and fall it foraged in flocks over all the lots of the farm. Sometimes with this bird, but more often in separate flocks, the rusty grackle visited the farm during migration. At this time also, the cowbird, often in large flocks, appeared in the open fields and helped to reduce the weed-seed harvest; but during the breeding season the species was limited to several pairs, which were generally to be seen walking about the pastures at the heels of the stock.

Other birds.—The robin, though not breeding at Marshall Hall, was abundant in spring and fall, and might be found foraging out in the centers of the largest fields. The goldfinch showed the same fondness for the open and was often observed feeding far afield in flocks of from 100 to 300. Of the birds of the open, that fed far out in all the five lots and did not depend on adjacent cover, there remain but two to be mentioned, the vesper sparrow and the savanna sparrow, which visited the farm only during migration, but helped, nevertheless, in the valuable work of destroying weed seeds.

BIRDS THAT DEPEND ON COVER.

Cover furnished by farm.—Other species, mainly sparrows, though occurring on the arable area, fed less generally out in the centers of the fields, and depended on protecting cover. This was afforded in part by an osage orange hedge which bounds three sides of lot 2, and by blackberry bushes and cedar and sassafras trees along fence rows. Excellent cover was furnished, also, by a narrow belt of locusts, cedars, and cultivated cherry trees along the edge of the river bluff, and by a tangle of blackberry, honeysuckle, smilax, wild grape, bittersweet, and trumpet creeper that grows under the trees and in many places covers the face of the bluff (Pl. VI, fig. 1). Other good cover, nesting sites, and feeding grounds are afforded by the trees and bushes around the house, by the forested gully of the hog lot (Pl. IV, fig. 2), and by the timbered outlets and bushy upper courses of Persimmon Branch and Partridge Branch. (The course of Persimmon Branch near the outlet can be seen in Pl. XII, fig. 2.) To the thickets of the hedgerows and streams is due the presence on the arable land of many species that would not live on unwatered and wholly cleared farms.

Field Sparrow.—The field sparrow, which appears so often in the open that it may almost be grouped with the preceding class, is found, on observation, to be dependent on cover. But it is a bird of the broom-sedge and briers, and its presence is not conditional on the neighborhood of large trees, water, or buildings, as is that of some other sparrows. Its nesting sites included each side of Persimmon Branch, the broom-sedge and dewberry tangle of the high part of the hog lot (Pl. VI, fig. 2), and the crest of the bluff overlooking the swamp. After the young were fledged small flocks of two or more families followed the branches, hedgerows, brush piles, and fence rows all about the arable part of the farm, even finding their way along a rail fence to tobacco seed beds in the woods. The field sparrows avoided timothy, but foraged far out in weedy old cornfields where the stalks remained standing, and when new corn had tasseled they fed under its shelter. They were found with most certainty, however, in waste grounds bearing little but broom-sedge and briers.

Chipping Sparrow.—The chipping sparrow, the field sparrow's congener, in conformity to its semidomestic habits, nested in the door yard, the kitchen garden, the adjacent orchard, and cedar trees near the storage barn. It was characteristic of roadside and rail fence and foraged in cropped pastures and among hoed crops. Unlike the field sparrow, it sought cover, not in bushes, but in trees isolated as in orchards. On account of these habits its work is more or less complementary to that of the field sparrow. Neither species was noticed feeding to any important extent in standing timothy, the habitat of the grasshopper sparrow, but they both destroyed weed seeds and insects over a large part of the farm, even out in the center of lot 4 far from cover. In August and September they fed together in loose flocks along fence rows. At this time there were nearly a hundred of the two species, the chipping sparrow being the more numerous.

Song Sparrow.—The song sparrow (fig. 3) is a bush bird, which, though feeding on the ground, is generally too cautious to venture far afield. It is essentially a bird of the waterways, and bred in the undergrowth along Persimmon Branch and the river, in the hog-lot gully, and about the calamus swamp; yet, like the chipping sparrow, it came with confidence up to all the buildings. It foraged over the garden and dooryard and along a strip several rods wide extending from the house to the mouth of Persimmon Branch. In feeding here it usually avoided the open parts of newly plowed fields, but ran amid corn, wheat, tobacco, truck, and timothy, and, as will appear later, did considerable good in this way. It spent much time along the river shore, however, and thus wasted opportunities for protecting crops. In summer it was less abundant than the chipping sparrow or the field sparrow, but after the breeding season it came down from the North in great flocks and did good work among weeds.

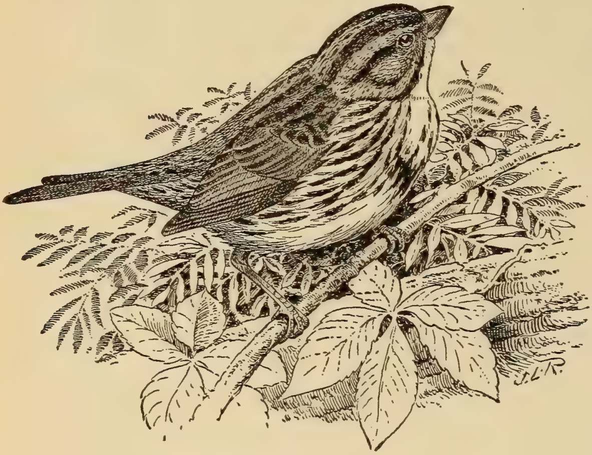


FIG. 3.—Song sparrow.

Other native sparrows.—Fox sparrows, and many tree sparrows, juncos, and white-throated sparrows also come down from the North in the fall. The fox sparrows are cover-loving birds, and frequented the tangle of the river front and Persimmon Branch, seldom venturing more than a rod into the fields. The whitethroats usually associate with song sparrows, and were found all along hedgerows and waterways. The tree sparrows associate with field sparrows, and like them preferred broom-sedge fields, though they, too, often followed the

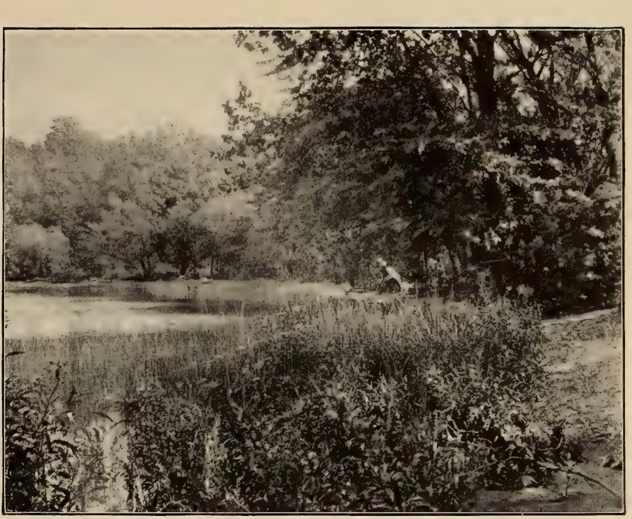


FIG. 1.—BAY AND HILL ADJACENT TO CALAMUS SWAMP.

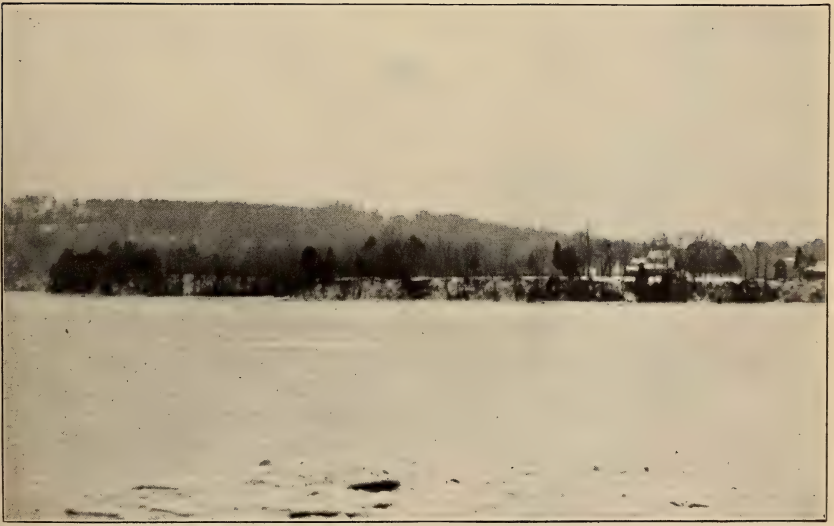


FIG. 2.—BRYAN FARM FROM THE RIVER, SHOWING SHORE, BLUFF, ALLUVIAL PLAIN, AND FORESTED HILLS.

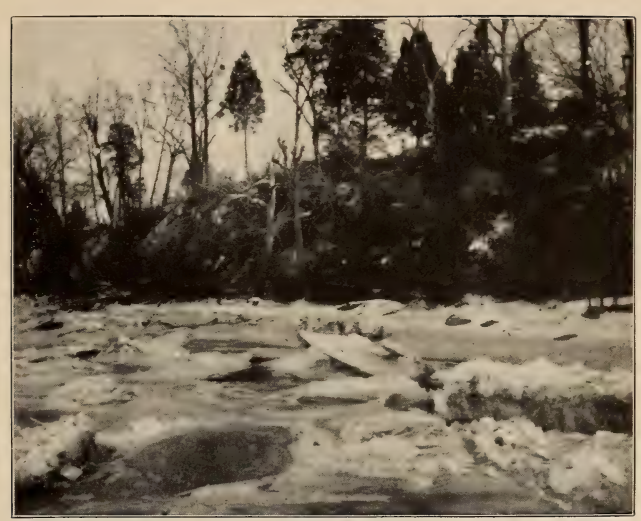


FIG. 1.—RIVER BLUFF IN WINTER, WHICH SHELTERS SEVERAL SPECIES OF NATIVE SPARROWS.

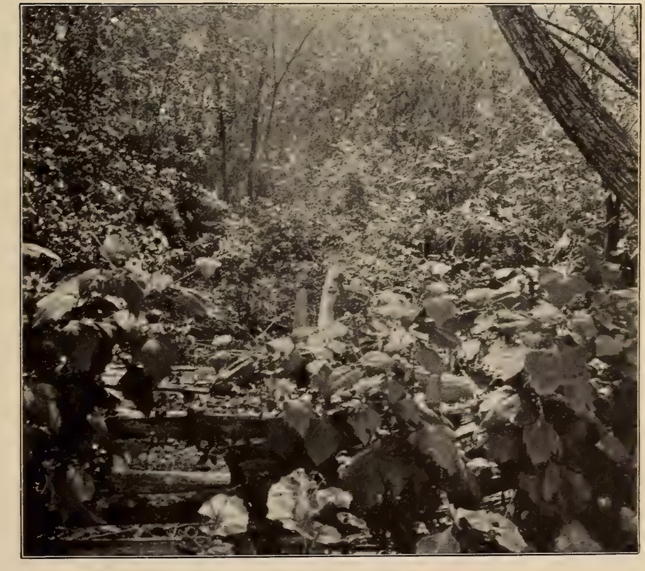


FIG. 2.—HOG LOT GULLY, WHICH FURNISHES SHELTER, SHADE, AND FOOD FOR MANY BIRDS.

hedges and water courses. The juncos are an independent species, taking refuge in large trees as well as in bushes, and foraged far afield, even in bare and exposed situations.

English Sparrow.—In addition to the native sparrows, the English sparrow occurred on the farm. Its distribution depended solely on suitable nesting holes and available grain. A dozen pairs bred in the crannies of the house, in an old dovecote on the granary, and in the dooryard locusts. At harvest time the flock numbered 100 or more. No part of the farm was too remote for their forays if it yielded them grain, so their feeding grounds varied with the rotation of crops. They were often to be seen, also, gleaning amid poultry and stock at feeding time, and stealing into the corn crib. The presence of this bird had affected the distribution of other species, particularly such as nest in cavities. The bluebird had been driven from the farm, and many of the house wrens that formerly bred about the buildings had had to seek more secluded places. A few pairs of wrens continued, however, to nest near the house in cavities too small to admit the sparrow. Others lived at both mouths of Persimmon Branch and the lower end of the hog-lot gully (Pl. IV, fig. 2).

BIRDS OF LESS LIMITED DISTRIBUTION.

Kingbird and Oriole.—About a dozen pairs of kingbirds and orchard orioles were also on the place. Neighbors at nesting time and often associates in their feeding range, they lived together in fruit trees by the house, and were also noted at the negro cabin and on the shore by the calamus swamp.

Wherever a kingbird's nest was discovered, a nest of the oriole was sure to be found in the same or an adjoining tree. It seemed odd that such a tyrant as the kingbird should tolerate such close proximity. The kingbirds skimmed over all the five lots after insects, occasionally poising on weedstalks and often perching on the highest trees along the river bluff and the hedgerows. The orioles, though not infrequently seen along fence rows, were generally confined to the trees of the river front, whence, however, they flew out into the adjacent mowing land to pick up insects from the ground.

Cedar Bird.—From a dozen to a score of cedar birds also frequented the trees along the river, though they did not nest on the farm, and they were often noticed at the ends of Persimmon Branch and in the hog-lot gully. Their distribution appeared to depend on the presence of ripe fruit, such as mulberries, cherries, blackberries, or cedar berries.

Catbird.—The most abundant summer bird was without question the catbird (fig. 4). Its usual habitat was practically the same as the song sparrow's—that is to say, the undergrowth of moist places. But while the song sparrow preferred thickets of blackberry, elder, and alder, somewhat open to the sun, the catbird chose tangles of catbrier deeply shaded by overspreading trees. It was therefore numerous in the swampy, forested dells at the extremities of Persimmon Branch (see map, Pl. II), and still more so in the hog-lot gully (Pl. IV, fig. 2), where it found attractive food, consisting of cherries, mulberries, blackberries, and elderberries, besides May-flies, which were abundant before the fruit ripened. Here, in one morning, fifteen catbirds were seen. Like the song sparrow, this species came up to nest about the house. One pair built in a holly by the gate, another near the horse tub, and two pairs in the garden. All these families fed among the vegetables and moved about under the apple trees and in the dooryard. The catbird is arboreal to the extent of securing probably three-fourths of its food in trees or bushes. Because of this fact, and also because its feeding range does not extend out into fields, it does not appear to have a close relation with crops.

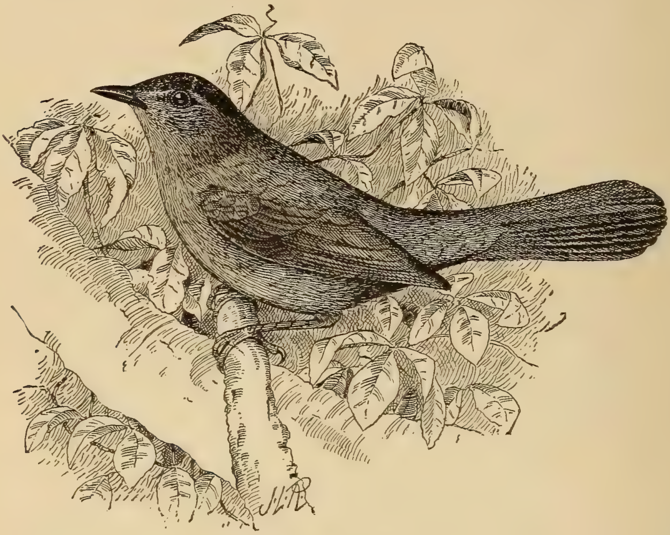


FIG. 4.—Catbird.

Other birds.—One or two pairs of cardinal grosbeaks bred on the river bluff, but more were noticed in the edge of the swamp bordering the arable land. They built chiefly among catbriers, in stunted young scrub pines, and in the tops of fallen oaks. Cardinals were also seen along the wooded parts of Persimmon Branch, and may have bred there. Two pairs of yellow-breasted chats nested close to crops, one in the thick undergrowth of Persimmon Branch and the other in a similar shaded thicket at the northeast corner of lot 4. Indigo birds and brown thrashers nested near the storage barn, phœbes in the cow barn, and swifts in the chimneys of the house.

BIRDS OF VARIED DISTRIBUTION.

The distribution of the birds remaining to be mentioned can not be so definitely limited. Various gulls and ducks were present in the river during the colder months. The least bittern, great blue heron, little blue heron, little green heron, and sora rail occurred in the calamus swamp (Pl. VII, fig. 1), and the little green heron was also noted feeding all along the river (Pl. III, fig. 2). Woodcock were found on Persimmon Branch near the river, and were observed at dusk flying into adjacent cornfields. Sandpipers, usually the spotted, but now and then the solitary, were to be seen, particularly at the mouth of the hog-lot gully, teetering along the beach in twos and threes.

Various species of hawks, including the broad-winged, red-tailed, red-shouldered, marsh, Cooper, sharpshinned, and sparrow hawks, occurred on the farm. One pair of Cooper hawks bred in the scrub pines on the edge of lot 4. Broad-winged and red-shouldered hawks built on the slope of the wooded hill that rises from the calamus swamp (Pl. VII, fig. 2). Eagles frequently came over from Virginia, and one established a post in a large tree on the bluff just below the negro cabin. Ospreys sometimes passed the farm on fishing trips up and down the river. Several pairs of great horned owls and screech owls built in the woods above the calamus swamp (Pl. VII, fig. 2). Turkey buzzards soared over the fields and often fed along the shore: some nested beyond the farm in the chestnut stumps of a deep, narrow gully.

Kingfishers, which bred in the sandy face of the bluff beyond the farm, fished in the calamus swamp and along the river front. The downy woodpecker foraged in all the fruit trees and nested in the hog-lot gully, at the river mouth of Persimmon Branch (see map, Pl. II), and also in some of the most remote woodland. Flickers, though breeding at Marshall Hall, were most numerous in spring and fall, when they frequently fed in open fields with robins. Sapsuckers were seen in various places during the colder half of the year, very often in the apple orchard by the kitchen garden. The red-headed woodpecker also occurred, but its distribution was very erratic. Night-hawks sometimes appeared in the late afternoon, circling after insects, and whip-poor-wills were frequently heard, though seldom seen. Hummingbirds were seen in various places about the farm dipping into the flowers of the trumpet creeper, persimmon, and tobacco. One nest was discovered on a horizontal bough on a red oak beside Persimmon Branch. Another was found fastened to the limb of a box elder in front of the farmhouse.

Two pairs of wood pewees nested in the kitchen garden and the dooryard, and more than a dozen pairs bred in the recesses of the woods. The great crested flycatcher habitually stayed in solitary retreats and journeyed over to the hog-lot gully, the river front, and even the dooryard. Several pairs of blue jays and scarlet tanagers frequented the oaks bordering lot 4. Two or three pairs of red-winged blackbirds, that sometimes fed on the cultivated land, nested in the calamus swamp (Pl. VII, fig. 1). Purple finches were found during the colder half of the year along the brink of the bluff. Barn swallows nested in the cow barn one summer, but the individuals usually seen were visitors from other farms, as were also the purple martins, white-bellied swallows, and rough-winged swallows, that mingled with the barn swallows, often in a flock of a hundred, and skimmed over the field in pursuit of insects.

The red-eyed vireo, in summer one of the most abundant species on the farm, built in trees everywhere, but was most numerous in deciduous woodland. Having strictly arboreal habits, it did not feed among field crops, but protected the foliage of orchard, shade trees, and woods. The white-eyed vireo was found in moist places outside of the cultivated land and also in the woodland about the calamus swamp. The last-named locality sheltered large numbers of migrating warblers in spring and fall. Here at these seasons could be noted the black-throated blue warbler, myrtle warbler, magnolia warbler, black-poll warbler, black-throated green warbler, pine warbler, prairie warbler, oven-bird, the two species of water-thrushes, Wilson's blackcap, and the Canadian warbler. The yellow warbler built near the house and also in willow swamp land back from the arable area. The redstart nested on the west side of the swamp. The Maryland yellow-throat, rivaling the song sparrow in numbers, frequented all the moist, bushy regions, but often came out into the five lots to feed along the fence rows, and was sometimes seen scurrying among the leaves of tobacco. Half a dozen or more pairs of long-billed marsh wrens had nests in the swamp (Pl. VII, fig. 1). Carolina chickadees nested near the swamp and in the pin oaks of the woods near lots 4 and 5, and several were seen in the orchard and the hog-lot gully. Tufted titmice were occasionally observed in the neighborhood of the swamp and the same woods. Kinglets of both species occurred in the apple orchards. The hermit thrush, olive-backed thrush, gray-cheeked thrush, and Wilson's thrush occurred during migration in the oaks bordering lot 4. The wood thrush was found breeding in the forest east of the calamus swamp (Pl. VII, fig. 2), but never came out into the garden or house yard, as it often does in more northern States.

TOPOGRAPHY OF HUNGERFORD FARM.

In order to study the effect of birds on a greater variety of crops than were grown on the Bryan farm alone, the next two farms, namely, the Marshall farm and the Hungerford farm, which were conveniently situated for the purpose and were kindly placed at my service by the owners, were visited from time to time. A brief description of the latter, on which most of these subsidiary observations were made, is necessary for a clearer understanding of the results here set forth. It is primarily devoted to truck and fruit, though it produces also wheat, corn, and tobacco. A hedgerow of large cedars cuts it into two parts, each part with its house and barn. The upper section has a swamp fed by a bushy brook and emptying into the river, while the lower section is drained by two ditches merging into one at their river outlet. There is also a timbered dell, shallow and swampy, which extends from the river back into the cultivated fields, and which harbored a colony of breeding crow blackbirds, more than a dozen catbirds, several woodcock, and at least two pairs of cardinals. Along the Hungerford farm the bluff is seldom half so high as on the Bryan farm, and in many places is entirely wanting.

II.—INSECT FOOD.

In studying data derived from the examination of stomachs collected over areas widely diverse in latitude and longitude the investigator seldom knows exactly what kinds of insects were available for selection at the time the food in the stomachs was obtained, how abundant relatively the various species of insects were, and to what extent, if any, they were injuring crops. He is therefore in some danger of misinterpreting results, especially when he attempts to show how the birds' insectivorous habits relate to agriculture in specific cases. He may, for instance, commend birds for having fed on a certain pest, when, as a matter of fact, they had found no other food available, or he may condemn them for not having eaten injurious insects when the district from which they came happened to be free from such plagues. For this reason, therefore, a careful study was made of the relative and absolute abundance of the different kinds of insects on the farm at each visit. It may be mentioned here that in recording observations of this kind the calendar date should be supplemented by the biological date, which shows the advancement of the season and is best determined by the condition of the vegetation; but this rule has not always been followed in the present report.

CRANE-FLIES.

The most interesting visits were, naturally, those made when insects were most numerous. Crane-flies appeared every year, but during 1900 were unusually abundant. The farm was visited on April 22 of that year when the forests were bare and the fields brown. Peach, plum, and pear were in bloom, but the apple was not yet out. Crane-flies were seen everywhere, but were thickest in the grass land of lot 1, where they fairly swarmed on the ground and flew into one's eyes, nose, and mouth. No birds were collected, for it was evident that all were feeding on crane-flies, which formed the only abundant supply of insect food. Several species of sparrows, including song sparrows, white-throated sparrows, and chipping sparrows, were observed greedily eating them. A pair of kingbirds left their perch on an apple-tree spray every now and then to snap up the insects, and a Maryland yellow-throat, several meadowlarks, and a pair of bobwhites feasted on the swarming prey. These insects fly feebly and are easily caught; and since there is hardly an insectivorous bird that is not known to take them, it seems safe to conclude that when they are abundant they are eaten in great numbers. Coming as they do in the spring, when other food is scarce, they are a boon to birds. They supply both the newly arrived species and those that are about to journey to their northern nesting grounds. The destruction of crane-flies by birds is a benefit to the farmer, as they are injurious to grain and grass. Their larvæ, repulsive, leathery-looking objects, feed underground, largely on roots. Crane-flies are said to do great damage in Europe, but are much less important in this country.

MAY-FLIES.

Of all the insects on the farm, the May-fly (fig. 5), during the period of its aerial life, is undoubtedly the most abundant and the most conspicuous. The respective numbers of other species fluctuate greatly from year to year, but the myriads of this plague are nearly always constant. Fortunately the life of the adult lasts only from a few hours to two days. As a water nymph, however, the insect lives from one to three years. When the locust trees are dropping their blossoms, usually about the middle of May, the nymphs rise to the surface of the Potomac, transform into adults, and flutter to the shore. The suddenness with which they appear and their vexatious numbers may be understood from a description of the conditions that prevailed at Marshall Hall from the 13th to the 15th of May, 1900. On the morning of the 13th not a May-fly was to be seen. In the late afternoon several were noticed along the shore. On the 14th many came up from the river and flew around the house, and on the morning of the 15th thousands were found clinging to the porch. They soon spread all over the farm, or, more strictly speaking, were blown over it. The air was full of them. After a walk of a hundred yards along the bluff in lot 3, I found 67 clinging to me. They covered the cedar trees beside the river, turning the dark green of the foliage to a distinct gray. They frightened the horses so badly by alighting on them that plowing was suspended for several days. They swarmed into the house and made meal-times almost unendurable. This condition

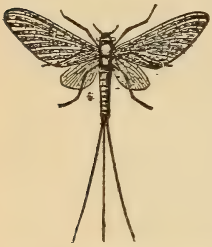


FIG. 5.—May-fly (from Packard).

seldom lasts more than a week or two. Soon the dead bodies of the short-lived creatures are cast up all along the shore in windrows several inches high, and then there is a marked decrease in their abundance about the farm. They occur, however, though in constantly diminishing numbers, throughout June and even into July.

At their flood tide they furnish most of the food of practically all the birds of the farm, even including barnyard fowls. They are soft, entirely edible, and highly nutritious, owing to the fact that the females are heavy with eggs. Any bird, no matter how clumsy, can capture them as they make their aimless, blundering flights, or fall helplessly from contact with objects in their way. It was interesting to see the methods by which different birds procured them. A green heron, three spotted sandpipers, several song sparrows, and a dozen crow blackbirds frequented the beach, picking up insect after insect. Woodpeckers and at times Carolina chickadees snapped them up from tree trunks in the apple orchard or the hog-lot gully. The parula warbler, the yellow warbler, and one or two other warblers, with the white-eyed vireo and the red-eyed vireo, gathered them from among leafy boughs. The redstart darted out and caught its share of the quarry on the wing. Some species fed in a lazy, sated manner. Thus in the top of a cedar that was gray with the insects, five crows sat for half an hour slowly choking them down. A pair of red-winged blackbirds and several blackpoll warblers later visited the same tree to feed. Such flycatchers as the phœbe, the wood pewee, the kingbird, and the great crested flycatcher stood nervously at their sentry posts, every now and then rising to hover and snap up a victim. The kingbird had another, more interesting method of feeding. Perched in the dead top of a tree, it would make a dash into one of the lateral boughs of an adjacent locust that was so heavily laden with May-flies that the tips of the branchlets drooped under the weight, dislodge hundreds of the insects, snap up several as they fluttered out, and then return to its perch. Over and over it played this game, apparently with keen zest. I watched a similar, though less adroit, performance by a female catbird that spent a long time gathering food for her young from a maple in the dooryard. Every few minutes she would take a short flight and drop on the end of a slender bough; then from the scores of May-flies shaken out she would, by clumsy efforts, generally manage to catch one. A hen with her brood of eleven chicks derived the chief profit from the bird's industry, and remained for two hours gobbling up the manna that rained from the maple tree. English sparrows also shook the insects from the branches and captured them on the wing. A flock of a dozen cedar birds pursued them through the air, appearing to swim rather than fly, and reminding one of a lazy sunfish dawdling after a baited hook. At other times, possibly when they were more hungry, they caught their prey with an alertness that would have been creditable in a flycatcher. Swifts and a variety of swallows, including the tree swallow, the bank swallow, the rough-winged swallow, the barn swallow, and the purple martin, appeared to feed on May-flies exclusively. Whenever a kingbird dashed into a tree these birds would fly by the dozen to the spot and seize the fluttering, helpless insects that had been dislodged. When, however, a gust of wind drove the May-flies before it, the swallows were seen to best advantage as they circled gracefully after them.

Field observations and the examination of stomachs proved that 40 species had eaten May-flies, but this number probably represents only about half the truth. Not many birds were collected at the height of the insects' abundance, because even casual observation showed that practically all the birds of the farm, not only the highly insectivorous species, but also the species chiefly frugivorous or granivorous, turned to them for food. The following is the list obtained:

List of birds known to have fed on May-flies.

Green heron.
Woodcock.
Spotted sandpiper.
Yellow-billed cuckoo.
Black-billed cuckoo.
Downy woodpecker.
Chimney swift.
Kingbird.
Great crested flycatcher.
Phœbe.
Wood pewee.
Blue jay.
Common crow.
Bobolink.
Red-winged blackbird.
Orchard oriole.
Crow blackird.
English sparrow.
Field sparrow.
Cardinal.
Purple martin.
Barn swallow.
White-bellied swallow.
Bank swallow.
Rough-winged swallow.
Cedar bird.
Red-eyed vireo.
Parula warbler.
Yellow warbler.
Black-poll warbler.
Water-thrush.
Maryland yellow-throat.
Yellow-breasted chat.
Wilson warbler.
Redstart.
Catbird.
House wren.
Carolina chickadee.
Blue-gray gnatcatcher.
Gray-cheeked thrush.

Though May-flies furnish valuable food for fish and do no harm to crops, they are of course a plague when they become so numerous. Broadly considered, however, their consumption by birds is a misfortune, for it suspends or prevents the destruction of really injurious insects. At no other time do all birds eat so large a proportion of insect food, for at no other time do they find such a scarcity of other suitable food, and if their attention were not diverted by this easy and palatable prey they might be expected to do the best of their work against insect pests. This unfavorable condition is, however, strictly local, lasts only a few days, and would not occur on areas remote from large bodies of fresh water where the May-fly breeds.

INFESTED CROPS.

At each visit the crops were inspected for pests, and whenever any crop had suffered appreciably it was regularly watched to see whether birds came to its relief. Stomachs were collected also around the infested fields.

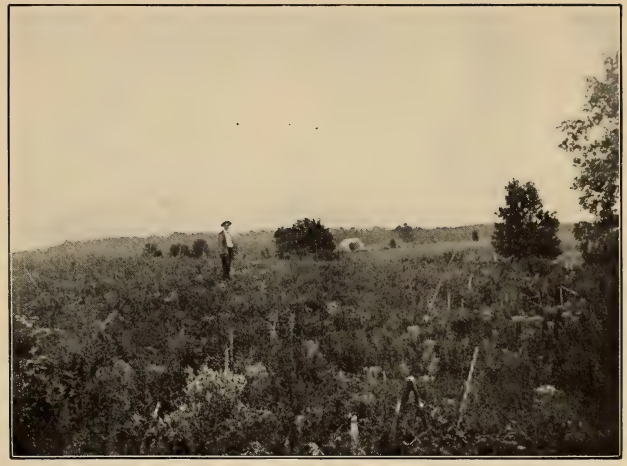


FIG. 1.—WEEDY OLD CORNFIELD, LOT 3.

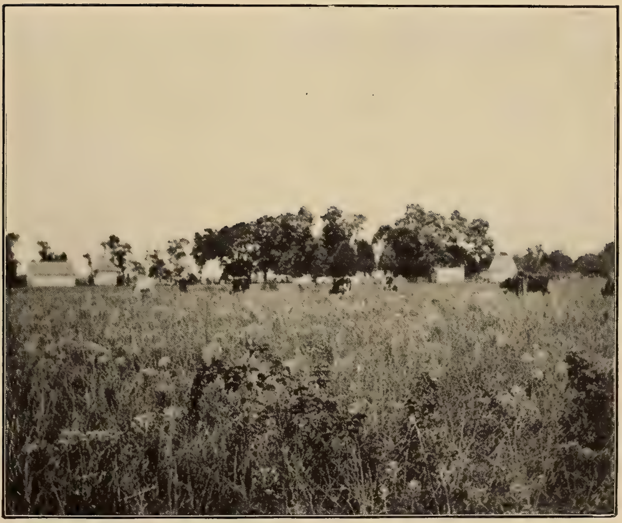


FIG. 2.—PASTURE, LOT 1.

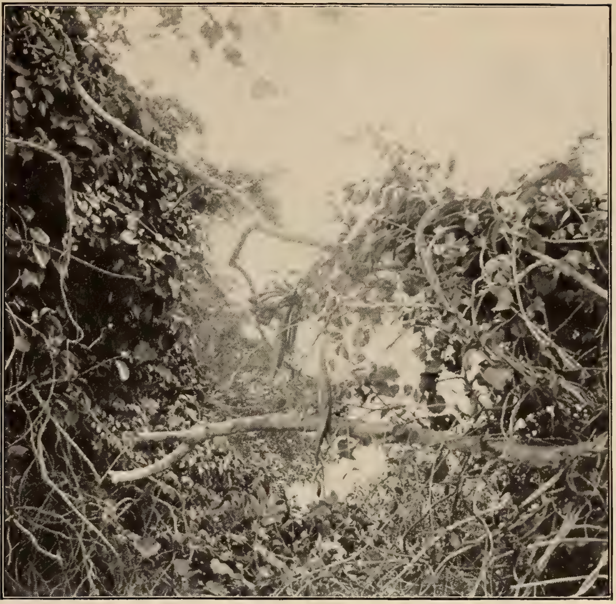


FIG. 1.—TRUMPET CREEPER AND OTHER VINES OF RIVER BLUFF.

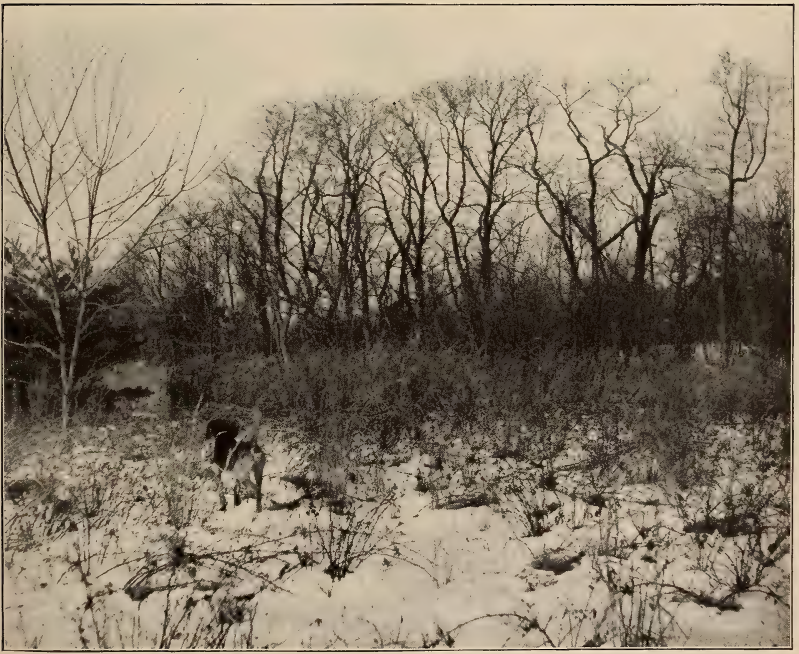


FIG. 2.—BROOM-SEDGE AND BRIERS IN HOG LOT.

White potatoes.—The potato beetle (*Doryphora 10-lineata*) caused every year considerable injury to white potatoes. During May, 1899, it had destroyed at least half of the foliage of several acres of potatoes about 6 inches high in lot 3. The field was watched for an hour or two each day for several days, but only three birds were seen in the patch—a pair of bobwhites, which are noted potato-beetle eaters, sometimes consuming from 50 to 100 at a single meal, and a cardinal, which is a near relative of the rose-breasted grosbeak, probably the the most valuable destroyer of the pest. Unfortunately neither species could be either observed feeding in the patch or subsequently collected. Other birds were very abundant along Persimmon Branch and the river front, but appeared to manifest no interest in potato beetles. From May 28 to May 30, 1896, the potatoes in the kitchen garden, though in fair foliage, had from several to a dozen beetles on each plant. Birds were about the garden all the time. Forty of them, principally catbirds, vireos, house wrens, chipping sparrows, summer warblers, orchard orioles, and flycatchers were collected, but none had eaten the beetles. On the 16th of June, 1901, a large patch of potatoes by the negro cabin in lot 2 was infested. Above it circled a score of swifts and swallows, mainly barn and bank swallows, with a few purple martins. They did not touch the beetles, but caught caddis-flies, which were numerous over the patch.

The caddis-fly, very abundant and regarded by birds as a choice morsel, may, like the May-fly, distract their attention from other insects. It usually appears about the last of May or the first of June, and it is greedily eaten by many species, especially by arboreal and aerial feeders. It is a harmless insect, whose larvæ lead an aquatic existence. It, too, like the May-fly, would be excessively abundant only near large rivers or lakes.

String beans.—At a time when potatoes were suffering in the kitchen garden (May 28–30, 1896), a dozen rows of string beans beside them were ravaged by thousands of bean flea-beetles (*Cerotoma trifurcata*), but none of the 40 birds collected had preyed on them, a fact possibly due to the presence of caddis-flies. Another uprising of these beetles was observed May 17–20, 1899, but then May-flies were abundant enough to engross the birds' attention. This beetle is similar, however, to species that are eaten by many kinds of birds, and, under other circumstances, might perhaps have been destroyed in large numbers.

Sweet potatoes.—Two tortoise beetles injure sweet potatoes (Pl. VIII, fig 2) at Marshall Hall. The more common one (*Coptocycla bicolor*) has the power to change its color, and at its brightest looks like a drop of molten gold, from which it is generally known as the 'gold bug.' During June, 1899, it was especially abundant. On the Marshall Hall farm, near a small plot of sweet potatoes that it was injuring, 20 birds, principally kingbirds, wrens, and chipping sparrows were collected. None of them had molested it. On the Bryan farm, in lot 3, it was so abundant that it killed every plant in a patch of several acres. The lot was watched for an hour or two for three days, but no birds were seen coming to the relief of the dying plants. On the Hungerford farm, 24 birds, largely wrens, barn swallows, and catbirds, were collected near infested plots, and one bird, a catbird, was found to have eaten a tortoise beetle. This fact appears to show that the insect is not unpalatable to catbirds, which might therefore have given some help to the potatoes if cherries had not been so plentiful.

Cabbages.—Three pests attacked cabbages—the wavy-striped flea-beetle, the common cabbage worm, and the harlequin cabbage bug. During the middle of June, 1899, the beetle was found in numbers varying from a dozen to a score on each plant of a cabbage patch on the Hungerford place, near the dell where the crow blackbirds breed. No birds were observed among the cabbages. Ten catbirds were collected in the dell, but they had fed mostly on May-flies. If these tempting insects had not been present, and if birds had come into the patch, doubtless they would have eaten the beetle, for it is closely allied to other forms on the farm that are eaten with avidity. The cabbage worm (*Pieris rapæ*) did considerable damage during June and July of 1896 and 1899 in the Bryan kitchen garden. From six to a dozen worms could be found on every cabbage. A few stomachs of catbirds, chipping sparrows, and other species numerous around the garden were collected, but none contained the worms. The patch was carefully watched for five days. Song sparrows, catbirds, and chipping sparrows frequently hopped among the cabbages, but were not seen to eat the worms. This was surprising in the case of the chipping sparrow, for it is known to hop up into cabbage plants and extract the larvæ. In one instance the kingbird fed on the butterfly of the cabbage worm. The harlequin cabbage bug occurred only once in injurious numbers, and then on the Marshall farm. From 20 to 50 bugs could be counted on each plant. Several field sparrows and grasshopper sparrows, the only species near the patch, were collected, but had not taken the bugs. Other observations have shown that birds do not like these insects, and consequently can not be depended on to destroy them.

Lima beans.--During the last week of June, 1899, the 12-spotted cucumber beetle (*Diabrotica 12-punctata*) was very abundant on lima beans, though not injuring them seriously. Twenty birds were collected close by, half of them chipping sparrows and the others kingbirds, house wrens, and goldfinches. None had eaten the beetles. The bobwhite and the white-eyed vireo, which feed on them, were not at hand.

Peas.—Next to the beans was a patch of peas so ravaged by the pea plant-louse that the crop was a total loss. Only one of the 20 birds had eaten it—a chipping sparrow. It was somewhat surprising to find even one, for the various species of plant-lice are seldom utilized by birds for food, but later it was learned that the chipping sparrow had elsewhere been found preying on the pea plant-louse. This insect has only recently become known to science. It suddenly made its appearance along the Atlantic coast and occasioned a loss of $3,000,000 in the first season.[a]

Melons.—Melons at times suffered badly from insects. In lot 4, not far from the woods, a patch of watermelons in the critical stage of growth, when the first leaf had appeared between the thick, nutritious cotyledons, was ravaged by three species of leaf-beetles—*Diabrotica 12-punctata*, *D. vittata*, and *Systena elongata*. There were from six to a dozen beetles on each plant, and they ate so many of the cotyledons that practically the whole piece had to be replanted. When they were most abundant the patch was watched for several hours on June 15, 1899, and again on June 16, but no birds came to its aid. Birds are known to eat these three insects at times, but the remoteness of the melon field from water courses, hedgerows, and other cover attractive to the most abundant species may explain their failure to do so in this case. At the same date (June 15, 1899) *Diabrotica vittata* was found on canteloupes in blossom on the Hungerford farm, but although there were from 12 to 20 insects on each plant, they appeared to be doing little harm. The patch was observed for an hour in the late afternoon, and three field sparrows, the only birds near it, were collected, but none of these insects were found in their stomachs.

Tobacco.—During the last of August and first of September, 1899, tobacco was grown on the Bryan farm in lot 2 near the negro cabin (Pl. VIII, fig. 1), and also on the other two farms. The entire crop was damaged by worms (fig. 6) to the extent of 50 percent of its value, in spite of the fact that men, women, and children turned out to pick worms every day for two weeks. When the pests were most abundant (August 28–31) an effort was made to learn whether birds were joining in the war against them. Field sparrows and chipping sparrows spent considerable time hopping among the plants, a song sparrow

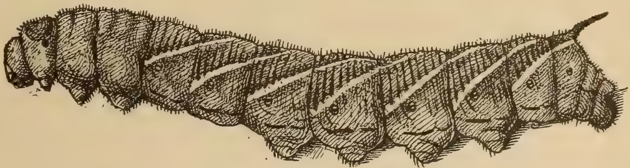


FIG. 6.—Tobacco-worm (after Howard; loaned by Division of Entomology).

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[a] Circular 43 (2d. series), Div. Entomology, Dept. Agr., p. 3, 1901.

and several wrens went into the field often, and two Maryland yellow-throats scurried among the leaves. Forty birds were killed in the vicinity of tobacco fields. They comprised, for the most part, the several species of native sparrows that breed on the farm, including also a few wrens, meadowlarks, flycatchers, and others. Not one of the 40 had fed on tobacco worms, although observations on the farm at other times had shown that birds eat them as well as other sphinx caterpillars. Bobwhites and vireos take them, but were not represented in the collection. The chipping sparrow had eaten them at other times, the English sparrow had been seen picking them from the plants, and the crow is known to be an habitual "wormer.' In June, 1900, an old crow and five young stayed near tobacco in lot 1 for ten days. In the early morning and late afternoon the youngsters would sit clamoring on the fence, while the mother bird brought them worms from the field.

By way of summary it may be stated that while the observations made to determine whether or not the birds of the farm were protecting field crops from insects yielded in the main negative results, they do not lead to the conclusion that birds are of no service. They do indicate, however, that birds are not to be depended on to check uprisings of insect pests, and that insecticides should be used freely and repeatedly. In case of this farm it is probable that the superabundance of May-flies and caddis-flies diverted the birds' attention from pests to the hordes of harmless insects. The pea plant-louse is a new species, unfamiliar to birds, which, however, seldom eat plant-lice. The potato beetle, though unpalatable and avoided by many birds, is eaten with relish by the bobwhite. Had an especial effort been made to collect this bird in infested fields, it would probably have been found to be doing much to reduce the numbers of the pest. Tobacco worms have also been attacked by the bobwhite as well as by the crow, English sparrow, and chipping sparrow; and it is likely that when these worms are small many species of birds feed on them.

INFESTED TREES AND SHRUBS.

Fall webworm.—The next group of observations concerns insects that attack trees and shrubs. The fall webworm occurred regularly at Marshall Hall. It was most often found on willow, black walnut, mulberry, apple, and pear trees. At a time when it was not especially abundant 62 birds, largely catbirds, sparrows, orioles, warblers, and flycatchers, were collected. One of the orioles, a male Baltimore, had eaten webworms. During the middle of June, 1899, webworms defoliated parts of apple and pear trees. A number of stomachs were collected and the trees were closely watched, but nothing gave evidence that the pest was being destroyed. During the last of August, 1896, it was so abundant that it defoliated all the willows of the hog-lot gully and fairly festooned the branches with webs. The trees were watched for three hours, August 23. Catbirds and vireos, though numerous, did not molest the larvæ, but a pair of yellow-billed cuckoos continually extracted them from the webs. The destruction of this insect is an habitual practice with the cuckoo. In a single stomach of the species examined by Professor Beal there were 325 of the larvæ.

Saw-flies.—In August, 1896, also, the willow saw-fly (*Pteronus*) was defoliating the willows farther up the gully. No birds were observed preying on it, though the cuckoo is known to relish saw-fly larvæ, sixty of which were found in a cuckoo's stomach examined by Professor Beal. The cornel bushes of the same gully were almost every year stripped by the larvæ of another saw-fly (*Harpiphorus varianus*). On July 30, 1895, they covered every large bush, and later they devoured all the foliage. A dozen catbirds and several birds of other species were constantly near the bushes, but evidently did not touch the insects. A repetition of these circumstances was noted August 2, 1896. An interesting outbreak of the pine saw-fly (*Lophyrus*) occurred May 17, 1900, in which hardly a dozen pine trees in the woods adjoining lot 4 escaped attack. In the areas of woodland where the insects had finished their work the trees cast no shade and appeared to be dead. In places where the larvæ were feeding their dropping excreta made a continuous patter like that of falling rain. From the infested district 34 birds were collected, comprising the following species: Great crested flycatcher, wood pewee, blue jay, crow, scarlet tanager, red-eyed vireo, white-eyed vireo, magnolia warbler, black-poll warbler, oven-bird, chat, Canadian warbler, redstart, gray-cheeked thrush, and olive-backed thrush. Seven birds, including the black-poll warbler, the red-eyed vireo, and the gray-cheeked thrush, had eaten the insect. Since it has not yet been found practicable to protect forest trees by means of insecticides, such services as birds render among these pests ought to be appreciated.

Plant-lice.—The fact that plant-lice are not selected by birds has been mentioned in the notes on the pea plant-louse. It was illustrated in the case of a large plant-louse (*Lachnus*) that was noticed on an old willow in the hog-lot gully August 23, 1896. The tree was infested by so many of the insects that its limbs were more or less covered with the honeydew that exuded from their honey tubes, but none of the numerous birds of the neighborhood manifested the slightest interest in the matter.

Locust Leaf-mining Beetle.—In the summer of 1895 a destructive outbreak of the locust leaf-mining beetles (*Odontota dorsalis*) turned all the locusts of the farm as brown as if they had been scorched by fire, ruining the verdure of the river bluff. On July 30, 1895, when adult beetles were swarming on the locusts of the hog-lot gully, catbirds were observed to be spending a good deal of time amid the browned foliage. Thirteen were collected and nine were found to have eaten the destructive beetles. One bird contained no fewer than 18. From 1896 to 1902, inclusive, the beetles did not again ruin the foliage, though they were present every year, and at times in early summer were so numerous that a scourge was feared. In 1896 the trees farther up the river, however, were turned brown, showing that the escape of those at Marshall Hall was not due to climatic conditions unfavorable to the insects; therefore it is possible that the birds were, at least to some extent, responsible for it. Forty-six birds from the following 21 species, taken during different years, had eaten the locust leaf-mining beetle:

List of birds whose stomachs contained locust leaf-mining beetles.

Catbird.
Chipping sparrow.
Field sparrow.
Song sparrow.
Towhee.
Cardinal.
English sparrow.
Red-eyed vireo.
Warbling vireo.
Yellow warbler.
Orchard oriole.
Baltimore oriole.
Scarlet tanager.
Kingbird.
Great crested flycatcher.
Wood pewee.
Phœbe.
Yellow-billed cuckoo.
Cedar bird.
Carolina wren.
Junco.

Moreover, when most of these birds were collected, the beetles were not numerous. All the common species, especially the arboreal feeders, ate them eagerly whenever they were to be had.

CERTAIN DESTRUCTIVE INSECTS.

Flea-beetles.—Reference has already been made to the injury done to melons by the flea-beetle (*Systena elongata*). Its congener, the pale-striped flea-beetle (*Systena blanda*—fig. 7) is also abundant on the farm and one or the other has been found harmful to corn, melons, and beans. Elsewhere they have attacked fruit trees and tomatoes. Fortunately, however, they appeared to form the natural beetle food of several ground-feeding species of birds and were sought for even when they were very scarce. They were seen in the stomachs of 28 birds, including the savanna, the grasshopper, the chipping, the song, the field, and the white-throated sparrows, the crow, the crow blackbird, the bobolink, the meadowlark, the house wren, and the Maryland yellow-throat. *Systena blanda* was found on ragweed in a field of ripe standing wheat, June 16, 1898. Eleven chipping sparrows that had been flying into the field were shot. None had taken wheat and eight had fed on the beetles, destroying in all 73. The smallest number found in a single stomach was 5, the largest 14.

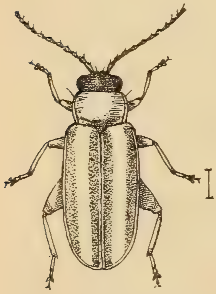

FIG. 7.—Pale-striped flea-beetle (*Systena blanda*) (after Chittenden; loaned by Division of Entomology).

Rose-chafer.—During the last week of May, 1896, the rose-chafer (fig. 8) was present in such numbers that 100 individuals were counted on one rosebush and three times that number on an adjacent blossoming elder. Of 62 birds collected during this outbreak, only 3—2 kingbirds and a cardinal—had destroyed rose-chafers. This result was not expected, because May-flies and other tempting insects were not common then, and because rose-chafers have no disagreeable secretions like those of potato-beetles and the two diabroticas, but are relatives of the May-beetle and the dung-beetles, which are highly relished by

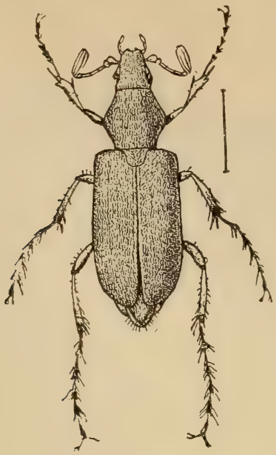

FIG. 8.—Rose-chafer (after Riley; loaned by the Division of Entomology).

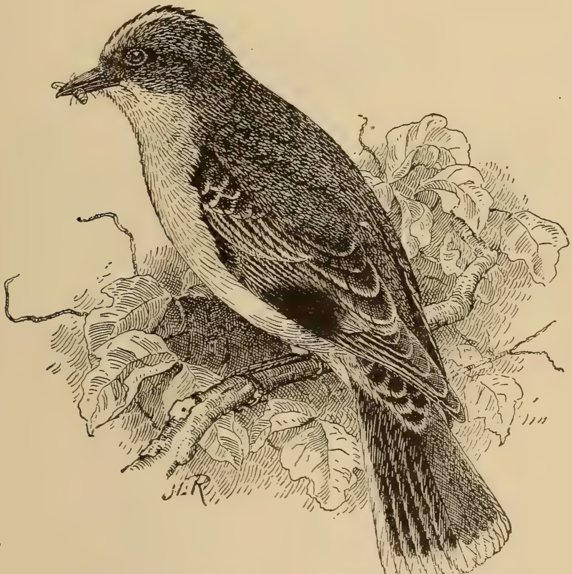

FIG. 9.—Kingbird.

many birds. The kingbirds (fig. 9) had, however, shown a great liking for rose-chafers, as these two, the only ones collected, had eaten 15 and 20 of the insects respectively.

May-beetle.—May-beetles attract only the larger species; their hard shells offer too much resistance to small birds. During their season—May and June—292 bird stomachs were examined, but May-beetles were found in only 16. These stomachs were from birds of the following ten species: Brown thrasher, orchard oriole, phœbe, catbird, gray-cheeked thrush, blue jay, crow, crow blackbird, screech owl, and broad-winged hawk. This record is far below a fair average, for at the time it was made the beetles were rare; moreover, the two famous beetle-eaters, the crow and the crow blackbird, were represented only by a single individual of each kind.

Cutworms.—Similarly unfavorable conditions attended the destruction of cutworms (fig. 14), though these insects are obtainable for a longer period and are edible for small as well as large birds. No serious outbreak of this pest occurred. Had there been one, birds would have been found combating it, for all species that are in the slightest degree insectivorous and feed at all on the ground show a marked liking for cutworms.

Grasshoppers.—Grasshoppers (fig. 10) when abundant are to the bird what bread is to man. They were, however, comparatively rare at Marshall Hall; therefore only 71 of the 645 native birds collected had eaten them, though most of these had made them the major part of their food. The list of species eating them is as follows:

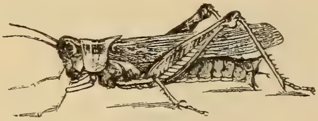

FIG. 10.—Grasshopper (after Riley; loaned by Division of Entomology).

List of birds examined whose stomachs contained grasshoppers.

Bobwhite.
Kingbird.
Great crested flycatcher.
Blue jay.
Common crow.
Cowbird.
Red-winged blackbird.
Meadowlark.
Orchard oriole.
Crow blackbird.
Savanna sparrow.
Grasshopper sparrow.
Henslow sparrow.
Chipping sparrow.
Field sparrow.
Song sparrow.
Cardinal.
Maryland yellow-throat.
Catbird.
Carolina wren.
House wren.
Brown creeper.
Robin.
Bluebird.

Had grasshoppers been abundant the birds would undoubtedly have destroyed them in large numbers. Their scarcity may possibly be due to the abundance of birds at Marshall Hall.

Ants.—Whenever temperature allowed any insects to occur in appreciable numbers, ants were abundant, and at times they were the most

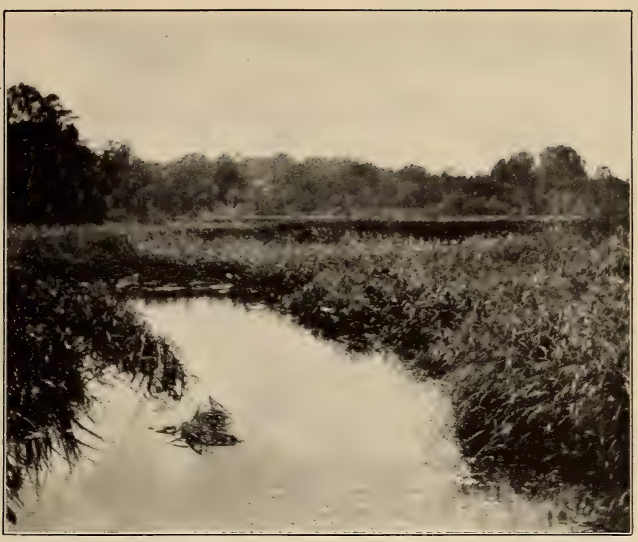

FIG. 1.—CALAMUS SWAMP, THE HAUNT OF SEVERAL MARSH-LOVING BIRDS.

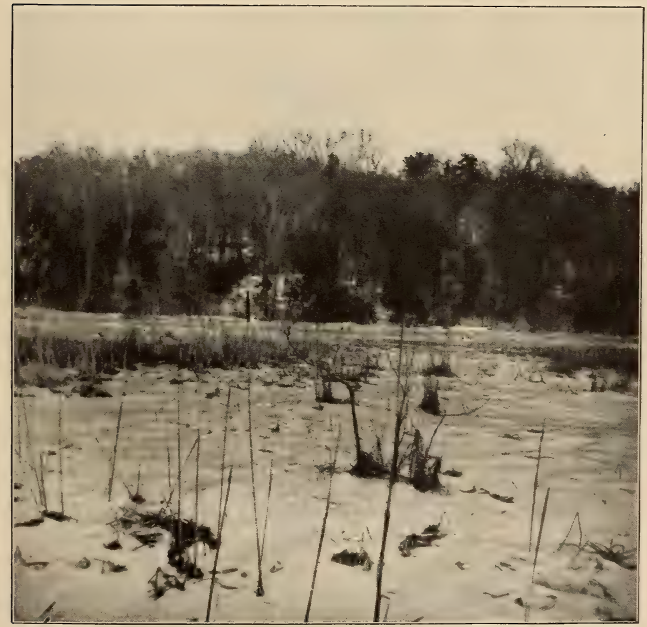

FIG. 2.—CALAMUS SWAMP IN WINTER, SHOWING HILL TENANTED BY BLUE JAYS, GREAT HORNED OWLS, RED-SHOULDERED HAWKS, AND RUFFED GROUSE.

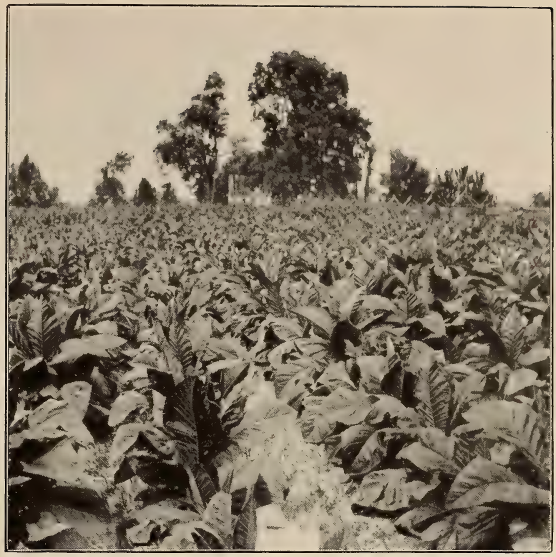

FIG. 1.—TOBACCO FIELD OF LOT 2, WHERE THE EFFECT OF BIRDS UPON AN UPRISING OF TOBACCO WORMS WAS STUDIED.

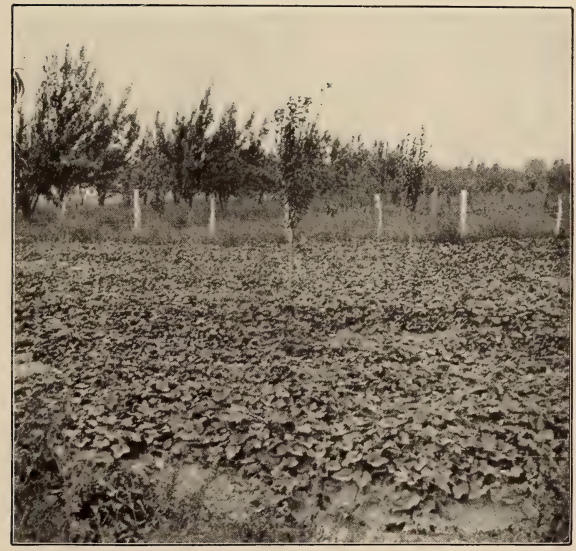

FIG. 2.—SWEET POTATOES AND PEAR ORCHARD, WHERE VARIOUS INVESTIGATIONS WERE MADE.

conspicuous of all forms of insect life. Of the 645 native birds collected, 147 had fed on them. Woodpeckers, flycatchers, night-hawks, swallows, catbirds, and white-throated sparrows seemed to have the most liking for them.

A large ant very frequently eaten is a black species, *Camponotus pennsylvanicus*, which during the warmer half of the year is very abundant on tree trunks. Its habits expose it to attack by several kinds of birds. The downy woodpecker was constantly making spirals around the trunks of trees at Marshall Hall in vigilant search for these insects. The catbird was seen feeding on them as they journeyed on the ground from tree to tree. These two birds probably destroy more than any other species, though the sapsucker also appears to relish them. The small species of ants are eaten much oftener than the larger ones, especially at their swarming time. For several days during the middle of April, 1899, great swarms of corn-louse ants (*Lasius*) were taking their marriage flight, and of the 55 birds collected then, mostly native sparrows, 23 had joined in the work of destroying them. This was a valuable service, for destruction of the corn-louse ant is the only effective means of combating the corn louse, which this ant protects and disseminates. Swallows, also, often attack the corn-louse ant. On July 8, 1898, six out of seven rough-winged swallows collected on the farm had fed on it and on little else, one bird containing 40 ants and another 50. At the same time kingbirds, house wrens, marsh wrens, yellow warblers, song sparrows, and chipping sparrows were making inroads on it, though it was much less numerous than during April, 1899. In the late afternoon of July 18, 1898, flying ants of the species *Myrmica scabrinodes*, which, as Prof. S. A. Forbes has shown, injure corn both when it is sprouting and when it is in milk and also foster the corn louse, were so abundant over lots 1 and 2 that their gauzy wings in the level sun rays filled the air with shimmering rainbow colors. Bank swallows were circling among them, close to the ground, making a hearty supper. By crouching low one could see them catch the insects, sometimes within a few feet of one's head. While the flock were feeding, four birds were collected. They had consumed practically nothing but ants and contained, all together, just 200. At this rate, 250 swallows—a fair estimate of the number present—would consume in a single afternoon 12,500 ants. Many other birds were feeding on them, including night-hawks, a single one of which has been known to eat 1,000 at a meal. A house wren, a yellow warbler, a chipping sparrow, and a phœbe, which were collected earlier, had all taken them, but three swifts collected after sunset had not.

On August 5, 1898, *Solenopsis molesta*, an ant injurious to corn and also a household pest, was swarming, and a number of birds were preying on it. In a newly mown timothy field near the cow barn a dozen chipping sparrows hopped about, springing a foot or two into the air every few minutes to obtain a mouthful. Two strayed off by themselves and made good subjects for observation. In twenty minutes they had eaten 21 ants. Song sparrows and English sparrows were feeding in a similar manner. A kingbird now and then left his station on an apple tree to snap up the prey, and bank swallows and barn swallows skimmed over the fields, gathering in large numbers. Undoubtedly other species were also doing good service.

The total number of native species engaged in the destruction of ants was 39 and included the following list:

List of birds examined whose stomachs contained ants.

Spotted sandpiper.
Downy woodpecker.
Flicker.
Kingbird.
Great crested flycatcher.
Phœbe.
Wood pewee.
Orchard oriole.
White-throated sparrow.
Chipping sparrow.
Field sparrow.
Junco.
Song sparrow.
Towhee.
Chat.
Canadian warbler.
Mockingbird.
Catbird.
House wren.
Long-billed marsh wren.
Cardinal.
Barn swallow.
Bank swallow.
Rough-winged swallow.
Red-eyed vireo.
White-eyed vireo.
Worm-eating warbler.
Yellow warbler.
Magnolia warbler.
Black-poll warbler.
Prairie warbler.
Oven-bird.
Water-thrush.
Maryland yellow-throat.
Brown creeper.
Carolina chickadee.
Blue-gray gnatcatcher.
Gray-cheeked thrush.
Olive-backed thrush.

On August 3 there was a large flight of termites (*Termes flavipes*), commonly known as white ants, pests that tunnel into woodwork. At the lower end of lot 3 fully 200 swallows, mainly bank swallows, with a few barn swallows and white-bellied swallows, were very busy among them. Two birds of each of the first two species and three of the third were found to have eaten together 320.

Weevils.—Sparrows, blackbirds, orioles, and meadowlarks appeared to be the worst enemies of weevils. The orchard oriole had a useful habit of feeding in plum orchards of the Hungerford farm on the plum curculio, which usually ruins seven-eighths of the crop at Marshall Hall. A score of bobolinks feeding (May 17 and 18, 1899) in a wheat field that was just coming into milk were suspected of injuring the grain, and six were shot. None of them had eaten wheat, but all had fed chiefly on a very injurious weevil—the imbricated snout-beetle (*Epicærus imbricatus*). A dozen bobolinks were observed (May 15, 1900) in plants of red clover securing the clover-leaf weevil (*Phytonomus punctatus*). These two weevils are also relished by blackbirds, meadowlarks, crows, catbirds, and other species. Bill bugs (*Spheno-*

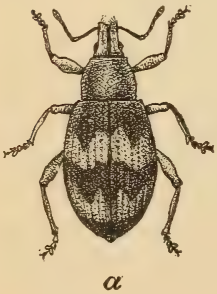

Fig. 11.—Weevil (after Chittenden; loaned by Division of Entomology).

phorus parvulus) also are often taken, but the small clover weevil (*Sitones hispidulus*) is destroyed most frequently of all. The sparrows and other terrestrial-feeding species and all the aerial feeders consume this little pest in great numbers. The rice weevil (*Calandra oryza*) was found in the stomachs of two marsh wrens collected in the wild rice of the swamp September 7, 1896, and the injurious cabbage curculio (*Ceutorhynchus rapæ*) had been eaten by three rough-winged swallows taken July 9, 1898. Among other weevils destroyed by Marshall Hall birds may be mentioned *Apion*, *Baris*, *Centrinus*, *Macrops*, *Tanymecus*, and *Tyloderma*.

The weevil-eating birds numbered 166 of the 645 collected, and were divided among the subjoined 44 species:

List of birds examined whose stomachs contained weevils.

Downy woodpecker.
Chimney swift.
Great crested flycatcher.
Wood pewee.
Blue jay.
Common crow.
Bobolink.
Cowbird.
Red-winged blackbird.
Meadowlark.
Orchard oriole.
Rusty blackbird.
Crow blackbird.
Savanna sparrow.
Grasshopper sparrow.
Henslow sparrow.
White-throated sparrow.
Chipping sparrow.
Field sparrow.
Junco.
Song sparrow.
Towhee.
Cardinal.
Barn swallow.
White-bellied swallow.
Bank swallow.
Rough-winged swallow.
Red-eyed vireo.
Warbling vireo.
White-eyed vireo.
Yellow warbler.
Magnolia warbler.
Black-poll warbler.
Oven-bird.
Water-thrush.
Maryland yellow-throat.
Chat.
Catbird.
House wren.
Long-billed marsh wren.
Brown creeper.
Carolina chickadee.
Gray-cheeked thrush.
Robin.

It seems strange that so many birds should have eaten weevils, for the insects were never sufficiently abundant to be conspicuous, seldom, indeed, affording the collector a dozen specimens without diligent use of the sweep net. Moreover, they harmonize so admirably with their surroundings that birds do well to find them at all. Many aerial feeders, it is true, capture them on the wing, but a large number of ground-feeding species take them from the ground despite their protective coloration. The inference is that birds find them dainty morsels, which pay for close seeking. Such a relish is not easily explained, for weevils appear scarcely more edible than little stones; but it is a fortunate circumstance, for they are dangerous pests, not easily controlled by insecticides.

Oak scale.—An unexpected and somewhat suggestive habit discovered at Marshall Hall was the feeding of certain species on scale insects. Of the 22 vireos and arboreal warblers collected during the pine saw-fly invasion previously referred to, 10 had preyed on an oak scale (*Kermes*). This insect does not occur on fruit trees, but its destruction suggested desirable possibilities in cases where scales of the orchard were present, notably in the case of the San José scale, which in many places has threatened to ruin certain horticultural interests.

Unobtainable insects.—There are several insects that would probably be palatable to birds if their habits did not render them unobtainable. During the summer of 1898 a grain moth caused a loss of 50 percent of the corn in the crib. The only birds that entered the building were English sparrows, which prefer grain to insects, and therefore probably did not destroy the larvæ. In 1900 tobacco was affected by a stalk-borer, the larva of a crambid moth, and in 1898 corn suffered severely from the corn stalk-borer (*Diatræa saccharalis*), but the seclusive habits of these two larvæ prevented the possibility of their destruction by birds. Certain kinds of flies, though palatable, are too alert to be caught. This proved to be the case with house-flies, stable-flies, bluebottle blow-flies, and horse-flies, particularly the banded-winged form (*Chrysops*). The last-mentioned flies were so numerous that they greatly annoyed both man and beast. The kingbird, the barn swallow, and the bank swallow frequently caught them, and in single instances Acadian flycatchers, catbirds, song sparrows, and chipping sparrows had eaten them.

USEFUL INSECTS.

In addition to injurious and neutral insects, certain species that are useful to man contribute to the food of birds. They consist for the most part of various kinds of bees, and numerous species of wasps and beetles that prey on insect pests.

Honey bee.—Birds are often accused of eating honey bees. The kingbird is most frequently mentioned in this complaint, and his nickname of 'bee bird' or 'bee martin' attests the common belief about him. It is true that he is often guilty of the charge, but as he selects the worthless drones and does not molest the workers, his habit is not injurious to bee keepers. During 1895 and 1896 two hives of bees within 30 feet of two kingbirds' nests were not meddled with at all.

A good deal has been written about the destruction by birds of useful predaceous and parasitic insects that serve to keep insect pests in check, and the assertion has been made that even though birds feed on pests, they destroy so many of these useful species that they overbalance by this injury the good which they accomplish. Special attention was given to this subject. Whenever any useful insect was abundant at Marshall Hall the relation of the birds to it was particularly noted.

Soldier-beetles.—With the exception of rose-chafers the useful soldier-beetle (*Chauliognathus pennsylvanicus*) was the most conspicuous species present May 28–30, 1896, after May-flies had become comparatively scarce. The soldier-beetles were in the grass, on blossoms, on the foliage of bushes and trees, and in the air, yet of the 62 birds collected, representing 19 species, only 3, namely, 2 wood pewees and a phœbe, had eaten them. At other times (June, 1898 and 1899), when the beetles were abundant, more than a hundred birds, including nearly all the common species on the farm, were collected, and only a chat, 2 catbirds, and 2 kingbirds (June, 1898) had eaten them. Experiments with several kinds of caged birds have shown that the species is distasteful, probably on account of its pungent and disagreeable flavor.

Fireflies.—Another useful predaceous beetle of the same family, having a similarly repulsive taste, is a firefly, *Photinus*. In June it sometimes, even during daylight, outnumbered the soldier-beetle, but it was never found in stomachs of Marshall Hall birds.

Tiger-beetles.—The useful tiger-beetle, a ferocious predatory insect, represented at Marshall Hall by several species, was never so numerous as the soldier-beetle or the firefly, but was often seen by the dozen, especially about the middle of April, in the sandy road along the bluff. It has no unpleasant flavor and must rely on its alertness to save it from enemies. When danger threatens, it springs into the air and flies swiftly away. Only the quickest birds have any chance of catching it. A few birds, mainly swallows and flycatchers, secure it occasionally. Of the 645 birds examined only a phœbe, a kingbird, a great crested flycatcher, and a crow blackbird had eaten it.

Ground-beetles.—With ground-beetles (Carabidæ, fig. 12), which as a class are regarded as predatory, the case was different. Most birds eat them, some species largely.

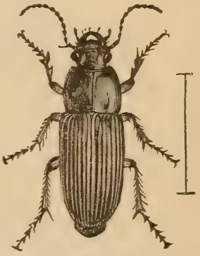
FIG. 12.—Ground-beetle (after Riley; loaned by Division of Entomology).

Ground-beetles are numerous in spring, then become less conspicuous, but appear later in large numbers. Their period of greatest abundance in the five years was April 10–14, 1899, when, with the exception of ants, they were the most noticeable insects on the farm. The smaller kinds (*Anisodactylus agricola*, *A. rusticus*, *Casnonia*, *Amara*, and a small *Harpalus*) predominated. Most of the birds collected then were sparrows, which had eaten very few of the beetles. At the same time the larvæ of a large ground-beetle (*Harpalus caliginosus*) were fairly abundant, and 4 of the 8 robins collected had destroyed them. During midsummer (especially 1898 and 1899) the large Carabidæ (*Harpalus caliginosus* and *H. pennsylvanicus*) fairly swarmed after dark and were attracted to lights in hosts. They were seldom seen during the day, but crows, blackbirds, catbirds, meadowlarks, and others frequently extracted them from their hiding places. Three meadowlarks (August

29, 1898) had made the bulk of their food of them. The genus is not exclusively carnivorous, for it has been known to feed on seeds of grasses and weeds, and recently (1900) has been discovered eating strawberry seeds to a harmful extent. One grower at Leechburg, Pa., lost on a quarter-acre patch $350 in three nights through their depredations.[a] The nature of the injury has so far made remedial methods impracticable; consequently the predatory habit of birds is valuable in this case.

There is an increasing tendency to doubt the utility of ground-beetles as a class. A European species (*Zabrus gibbus*) is a notorious grain pest, and an American species (*Agonoderus pallipes*) has recently been ascertained to feed sometimes on newly planted corn. Professor Forbes has shown that the food habits of ground-beetles vary with the structure of their jaws, species with sharp-curved jaws being carnivorous, while those with blunt jaws are decidedly vegetarian. Only a few—probably less than half a dozen—of the Marshall Hall birds examined had destroyed the more carnivorous species. It is probable, therefore, that birds do no appreciable harm in their relation to ground-beetles, but may even do some good by reducing the numbers of such species as have vegetarian habits and occasionally become pests. The following is a list of the different ground-beetles found in the stomachs collected: *Amara*, *Anisodactylus agricola*, *A. rusticus*, *Bembidium*, *Cratacanthus dubius*, *Chlænius æstivus*, *Harpalus caliginosus*, *H. pennsylvanicus*, and several smaller species of *Harpalus*. These had been eaten by 82 birds of the following 35 different species:

List of birds examined whose stomachs contained ground-beetles.

Woodcock.
Spotted sandpiper.
Bobwhite.
Downy woodpecker.
Flicker.
Kingbird.
Great crested flycatcher.
Phœbe.
Blue jay.
Crow.
Red-winged blackbird.
Meadowlark.
Rusty blackbird.
Crow blackbird.
Savanna sparrow.
Grasshopper sparrow.
Henslow sparrow.
White-throated sparrow.
Chipping sparrow.
Junco.
Song sparrow.
Towhee.
Cardinal.
Water-thrush.
Louisiana water-thrush.
Maryland yellow-throat.
Chat.
Mockingbird.
Catbird.
Brown thrasher.
House wren.
Gray-cheeked thrush.
Olive-backed thrush.
Robin.
Bluebird.

Ladybirds.—The most useful of all beetles are the members of the family Coccinellidæ, commonly known as ladybirds, which with their larvæ are voracious feeders on insect pests. Only three of the Marshall Hall birds—a long-billed marsh wren, a song sparrow, and an English sparrow—were found to have destroyed these valuable insects.

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[a] Bull. Cornell Univ. Agric. Expt. Sta., p. 150, 1901.

The particular species eaten was in each case *Hippodamia maculata*. It was not noticeably abundant at the time it was taken, but during August, 1896, it was the most conspicuous insect on the farm. Then, however, it was not molested. Ladybirds of another species (*Coccinella 9-notata*) were very numerous when the pea plant-louse was making havoc, and appeared on every pea vine greedily devouring the plant-lice. It was, fortunately, quite free from attack by birds. Indeed, ladybirds appear to be distasteful to birds. I have offered them to a dozen different caged birds, and they have always been refused.

Flies.—Beneficial diptera, such as the predatory robber-flies and the parasitic tachinid and syrphid flies, are too alert to be caught by any birds except flycatchers and swallows, and even these secure them rarely. During June and July, when robber-flies were plentiful, birds were not found disturbing them. Syrphid flies were so numerous during the last of August, 1899, that several would alight on my camera whenever it was set down, but a score of birds collected then had not made use of them as food.

Bees[a] **and wasps.**—The most abundant and conspicuous of the useful insects are bees and the flower-fertilizing species of wasps. Of the 645 native birds collected only 31, representing 20 species, had eaten bees. It is interesting to note that the offenders were largely either warblers or aerial feeders. The list is appended:

List of birds examined whose stomachs contained bees and wasps.

Chimney swift.
Ruby-throated humming-bird.
Kingbird.
Rusty blackbird.
Henslow sparrow.
Chipping sparrow.
Song sparrow.
Scarlet tanager.
Purple martin.
White-bellied swallow.
Bank swallow.
Rough-winged swallow.
Red-eyed vireo.
Yellow warbler.
Black-poll warbler.
Water-thrush.
Maryland yellow-throat.
Canadian warbler.
Catbird.
Carolina chickadee.

Practically all the bees eaten were small species of the family Andrenidæ, mainly *Andrena* and *Halictus;* the larger species are seldom taken. During May, 1900, bumblebees and carpenter bees congregated in such numbers around locust trees white with grape-like clusters that from sunrise to sunset a deep, continued hum arose as from a hive; and when fruit trees were in blossom bees swarmed about them also: but in both cases observation failed to discover any consumption of the insects by birds. Blossoming persimmon trees alive with bees were watched for several hours, but only one bird, a hummingbird, visited them.

No arculate wasps, except certain species of the family Scoliidæ, become food for birds; indeed, less than half a dozen of all the birds collected had taken these species. Others, such as *Vespa*, *Polistes*, *Pompilus*, *Pelopœus*, *Monobia*, and *Ammophila*, were collectively abundant on frequent occasions, but so far as observation went no birds preyed on them.

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[a] Exclusive of the honey bee, which is considered separately (see p. 36).

That birds feed extensively on parasitic wasps is indisputable; but the harm thus done is less than might be supposed, for the usefulness of such wasps is in inverse ratio to their size, and birds seldom select the smallest forms, such as Braconidæ and Chalcididæ. Ninety-seven of the Marshall Hall birds, representing the following 36 species, had eaten parasitic Hymenoptera.

List of birds examined whose stomachs contained parasitic wasps.

Bobwhite
Downy woodpecker
Chimney swift.
Kingbird.
Great crested flycatcher
Phœbe.
Wood pewee.
Blue jay.
Bobolink.
Red-winged blackbird.
Meadowlark.
Orchard oriole.
Baltimore oriole.
Grasshopper sparrow.
Chipping sparrow.
Field sparrow.
Song sparrow.
Scarlet tanager.
Summer tanager.
Purple martin.
Barn swallow.
White-bellied swallow.
Bank swallow.
Red-eyed vireo.
Warbling vireo.
White-eyed vireo.
Yellow warbler.
Magnolia warbler.
Black-poll warbler.
Louisiana water-thrush.
Maryland yellow-throat.
Chat.
Redstart.
Catbird.
Long-billed marsh wren.
Olive-backed thrush.

In this mischief the flycatchers are by all means the greatest offenders, the swallows next, and, less generally but still noticeably, the warblers next. Of all the flycatchers the wood pewee appeared to be the most active and persistent in this destruction. Parasitic wasps are not usually so alert and swift as many other insects; therefore they are easy victims. Most of the class are ichneumon flies (Ichneumonidæ—fig. 13). Somewhat more than a fifth of the birds that had taken parasitic wasps, however, had fed on a certain black wasp, *Tiphia inornata*, which is a vigorous enemy of the larva of the May-beetle. These wasps are so common in May and June that it is not unnatural that a good many should fall prey to birds. The only other noticeably abundant parasitic Hymenoptera were some very large braconids

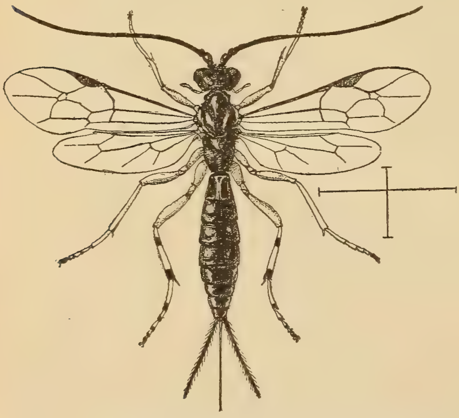

FIG. 13.—Ichneumon fly (after Howard; loaned by Division of Entomology).

(*Melanobracon*), of which at any time during the first part of September, 1896, a dozen could have been collected within a few minutes. Field sparrows and probably other birds consumed them freely, though as a rule parasitic Hymenoptera are eaten only in small numbers.

Many of these useful species appear too late in the season to be of much effect. An attempt was made to measure the evil effects of their destruction by observing how far they were parasitizing abundant insect pests, but conditions were unfavorable and adequate results were not obtained. The white grub of the May-beetle was not present in numbers sufficient to furnish evidence. The tobacco worm was parasitized by braconids to some extent, but even at the time of greatest activity (August, 1898) only one-tenth of 1 percent of the worms were attacked. The question, then, of the degree to which birds offend by preying on these Hymenoptera remains, so far as Marshall Hall is concerned, a doubtful one, especially since most of the species destroyed are not known to be effective parasites.

SUMMARY.

Considering the insect food of the 645 native birds collectively, we find that the birds were most insectivorous in May, when somewhat more than 90 percent of their food was insects, and that naturally they took the fewest insects in the coldest weather. During the blizzard of February, 1900, however, insects constituted 12 percent of the diet of the 37 birds collected. Throughout the entire time of observation insects and their allies, including a small percentage of spiders and other invertebrates, amounted to 60.41 percent of the total volume of food. They are distributed as follows:

Proportion of insects and their allies in food of birds examined.

	Percent.
White ants	1.07
Bugs	3.63
May-flies	6.51
Ants and other Hymenoptera	9.64
Caterpillars, with a few adult Lepidoptera	7.80
Grasshoppers and a few crickets	4.11
Beetles	18.62
Miscellaneous insects	3.72
Spiders	4.48
Miscellaneous invertebrates, mainly crustacea, snails, and myriapods	.83
Total	60.41

The bugs consisted both of Heteroptera and Homoptera. The Heteroptera included such forms as *Podisus*, *Euschistus*, *Trichopepla semivittata*, *Sinea diadema*, *Thyanta custator*, *Hymenarcys nervosa*, *Metapodius femoratus*, *Nezara hilaris*, *Corizus*, *Coriscus*, *Corimelæna*, *Prionidus*, *Alydus pilosulus*, and *Alydus eurinus*. The Homoptera included leaf-hoppers, scale insects, and an occasional plant-louse and giant water-bug. Of the Hymenoptera the insignificant proportion of 1.89 percent consisted of parasitic wasps, while the remainder was almost entirely ants. The Lepidoptera were very nearly all caterpillars, though moths were occasionally eaten. The caterpillars comprised the smooth forms, oftenest cutworms (fig. 14) and others of the family Noctuidæ, together with some Geometridæ and occasionally an arctiid or a sphingid. The grasshoppers were long-horned grasshoppers (Locustidæ) and short-horned grasshoppers (Acrididæ), the latter consisting of such forms as *Hippiscus*, *Melanoplus atlanis*, *Melanoplus femur-rubrum*, and *Dissosteira carolina*, the former largely of such meadow grasshoppers as *Xiphidium* and *Scudderia*, with an occasional katydid. Beetles formed twice as large an element of food as any other order of insects. Ground-beetles (Carabidæ), generally considered useful, formed 2.10 percent of the food; injurious species, largely weevils (Rhynchophora) and leaf-beetles (Chrysomelidæ), and, to a smaller extent, lamellicorn and longicorn beetles, leaf-chafers, click-beetles, and metallic wood-borers (Buprestidæ), amounted to 13.25 percent; while miscellaneous beetles, largely dung-beetles of the genera *Aphodius* (fig. 15), *Atænius*, and *Onthophagus*, and beetles of a number of other families, such as the Anthicidæ, Bruchidæ, Byrrhidæ, Histeridæ, Staphylinidæ, and Tenebrionidæ, completed the remaining 3.27 percent of the beetle food. The spiders were largely the ground-spiders of the family Lycosidæ. Spiders are said to do about as much good as harm, and are usually regarded as of no economic importance.

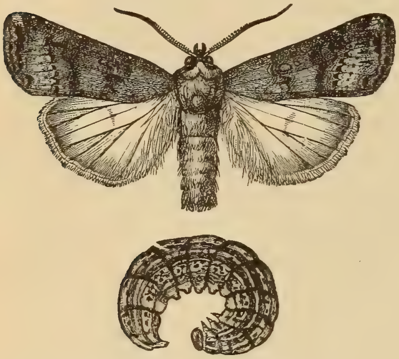

Fig. 14.—Cutworm and moth (after Howard; loaned by Division of Entomology).

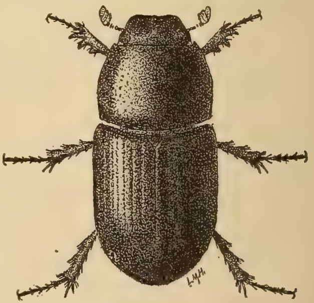

Fig. 15.—Dung-beetle (*Aphodius*) (after Prof. S. A. Forbes).

Beneficial insects (predaceous beetles and parasitic wasps) formed 3.97 percent of the food, while injurious insects, principally caterpillars, grasshoppers, and harmful beetles, amounted to 26.80 percent. It will be remembered, however, that what has already been said about the destruction of useful species shows that but a small fraction of the percentage of these insects should really be counted against the birds.

FOOD OF NESTLINGS.

The largest consumption of insects is to be credited, not to adult birds, but to young ones in the nest. All land birds at Marshall Hall except birds of prey and doves, whatever be their own diet, feed their young chiefly on insects from the time they are hatched until they leave the nest. Many species rear every season two or three broods of from 3 to 5 each, and so voracious are these wide-mouthed youngsters that the parents can supply their wants only by unremitting efforts. Meals often begin before sunrise and continue till after sunset, frequently occurring every two minutes. At first nestlings take considerably more than their own weight of food in a day, and they increase in weight daily from 20 to 50 percent. The number of insects required to supply a season's host of nestlings must be almost incalculable.

Work of other investigators.—One can best study the food of young birds by field observations. Such studies have been pursued by Mrs. Wheelock,[a] Dr. Francis H. Herrick,[b] and Prof. Clarence M. Weed.[c] Professor Weed's bulletin on the feeding habits of nestling chipping sparrows has already been cited at length in Bulletin 15 of the Biological Survey. Dr. Herrick found young cedar birds fed by their parents on grasshoppers, cicadas, chokecherries, raspberries, and blueberries. A brood of red-eyed vireos were given blackberries, red raspberries, bugs, beetles, larvæ, katydids, and grasshoppers. Nestling catbirds were nourished with red cherries, strawberries, larvæ, moth millers, beetles, and dragon-flies (*Æschna heros* and *Libellula pulchella*). Young bluebirds were fed robber-flies (*Asilus*), larvæ, crickets, grasshoppers, and katydids. Mrs. Wheelock states that she observed nestling red-headed woodpeckers eating black beetles; that marsh wrens bring May-beetles to their broods; that young robins are fed moths and dragon-flies, and that crows give frogs and nestling birds (English sparrows, song sparrows, and meadowlarks) to their young.

Methods of investigation.—Mrs. Wheelock's excellent results were obtained in the field by observing the nests *in situ*, and Dr. Herrick's by cutting the nests down and placing them in a favorable situation for observation. Both of these methods have been employed at Marshall Hall. The choice of glasses is important. Mrs. Wheelock used binoculars in studying her subjects. These were used at Marshall Hall with the best success in the case of very active shy birds or those in shadow. A Zeiss monocular 12-power was tried, but was found to be useless unless there was an abundance of strong sunlight, and under any circumstances not so desirable as had been anticipated. A 2-inch telescope with a single draw tube proved much more serviceable. Working with it, however, is very slow and arduous on account of its limited field and the difficulty of changing the focus quickly.

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[a] Nestlings of Forest and Marsh, 1902.

[b] Home Life of Wild Birds, 1901.

[c] Bull. 55, N. H. Agr. Expt. Sta., 1898.

Grasshopper Sparrow.—The difficulties encountered in the use of the telescope in field work may be well shown by a somewhat detailed account of its use in the following instance: On July 9, 1898, a grasshopper sparrow's nest containing four naked young birds was found in a bunch of rabbit-foot clover in a timothy field of lot 1, several rods from the cow barn. The male parent was poised on a weed stalk at no great distance, rattling out his dry ditty, never once stopping to help the mother bird, which was making frequent journeys for food. The latter, on seeing me, perched on a dead mullein stalk 20 to 30 feet away, instead of carrying to her little ones the mouthful she held. The telescope was immediately focused. It enlarged the mother bird so much that she appeared to be peering in at the end of the instrument. The object in her bill was seen to be of a delicate green color, but before further observation could be made she flew to the top of a blackberry bush. Here, by fragmentary glimpses, during which it was necessary to change the focus several times, a narrow wing cover and a long, slim leg were discerned, which showed that the insect belonged to the order Orthoptera (grasshoppers, crickets, etc.). The bird next returned to her perch on the mullein stalk, where she remained long enough to enable the telescope to reveal, projecting from the beak on the side opposite the leg and wing, two filiform antennæ which exceeded the body in length and furnished the necessary clew to the insect's identity as a meadow grasshopper. Further observations were made, with the same interruptions and demands upon the patience. In the next two trips she brought the same insects. She next came with a cutworm, then with a chrysalis, and later with two short-horned grasshoppers (*Melanoplus* and *Dissoteira*). The meagerness of these results, considering the time required for obtaining the information, was due to the restless uneasiness of the grasshopper sparrow and the location of the nest in an open field where no cover for the observer was available to reduce the bird's apprehension. Observation of a house wren (see p. 45) was conducted under more favorable conditions and was much more satisfactory. No nestling grasshopper sparrows were collected at Marshall Hall, but 14 from other localities have been examined, and diagrams that were made of their food and of that of 10 adults taken at the same time show the great importance of insects in the food of nestlings.[a]

Orchard Oriole.—A few observations were made of a brood of well-feathered orchard orioles in a black-walnut tree near the negro cabin,

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[a] These diagrams were published in an article entitled The Food of Nestling Birds, which appeared in the Yearbook of the Dept. of Agriculture for 1900.

July 18, 1898. The male parent, a bird in greenish plumage, did not help to provide for the young, but appeared to think that his sole duty consisted in coming to the tree occasionally and singing. The mother worked incessantly. It was difficult to identify what she brought, because she was so shy and remained at the nest so brief a time. I had to stand close to the tree and focus the glass on her when she was nervously hopping from branch to branch. Working under these difficulties I was able to identify but 2 caterpillars, 3 May-flies, 2 short-horned grasshoppers, and 3 meadow grasshoppers.

House Wren.—The most satisfactory and continued observations were made June 17, 1899, of some young house wrens that were about three-fourths grown. In this case it was found desirable to remove the nest, which was in a cavity in a locust tree, transfer it to a baking-powder can, and nail the can to the trunk of the tree about 4 feet from the ground. The following is a detailed account of the feeding:

Feeding of a brood of house wrens.

A. M.	
5.55.	Green caterpillar (*Heliothis dipsaceus*).
5.56.	May-fly.
6.00.	May-fly.
6.02.	Undetermined.
6.05.	*Heliothis dipsaceus.*
	(Observations suspended till 7.20 a. m.)
7.21.	Undetermined.
7.23.	May-fly.
	(Observations suspended till 7.45 a. m.)
7.46.	Harvestman (Phalangidæ).
7.47.	May-fly.
7.48.	Undetermined insect.
7.49.	Undetermined.
7.51.	Undetermined.
7.55.	Undetermined.
7.56.	Undetermined.
7.57.	Undetermined.
7.57½.	Undetermined.
8.00½.	Undetermined.
8.01.	Undetermined.
8.03.	Undetermined.
8.03½.	Undetermined.
8.06.	*Heliothis dipsaceus.*
8.08.	Undetermined insect.
8.11.	Undetermined insect.
8.13½.	Brown caterpillar.
8.16.	Undetermined insect.
8.18.	Undetermined insect.
8.20.	Undetermined insect.
8.22.	Undetermined insect.
8.23.	Two May-flies.
A. M.	
8.24.	May-fly.
8.29.	Brown orthopterous insect.
8.30.	*Heliothis dipsaceus.*
8 35.	Undetermined.
8.38.	Caterpillar.
8.41½.	May-fly.
8.43.	May-fly.
8.45.	Brown caterpillar (cutworm?).
8.46.	*Heliothis dipsaceus.*
8.47.	Undetermined insect.
8.48.	Undetermined insect.
8.49.	Undetermined insect.
8.50.	Undetermined insect.
8.52½.	Cutworm (?).
8.55.	*Heliothis dipsaceus.*
8.56.	Undetermined insect.
8.59.	Pentatomid bug (*Nezara?*).
9.03.	Cutworm (?).
9.05.	Cutworm.
9.10.	Caterpillar (*Acronycta oblinita*).
9.13.	Brown soldier bug.
9.17.	Green caterpillar (noctuid).
9.20.	White grub.
9.25.	Clay-colored grasshopper.
9.25½.	Grasshopper.
9.30.	Undetermined insect.
9.37.	(Two cabbage worms placed on edge of tin can.)
9.38.	*Acronycta oblinita.*
9.39.	*Heliothis dipsaceus.* (Refused cabbage worm.)
9.39½.	May-fly.

Feeding of a brood of house wrens—Continued.

A. M.	
9.45.	Grasshopper.
9.46.	Cutworm.
9.50.	Grasshopper (*Melanoplus*).
9.52.	Saw-fly larva (?).
9.54.	Miller (noctuid).
9.55.	*Heliothis dipsaceus.*
9.57.	*Heliothis dipsaceus.*
10.00.	Spider.
10.01.	*Heliothis dipsaceus.*
10.05.	Black chrysalis.
10.08.	Cutworm.
10.15.	Spider.
10.16.	Caterpillar.
10.20.	May-fly.
10.23.	Spider.
10.26.	Clay-colored grasshopper.
10.29.	Clay-colored grasshopper nymph.
10.30.	*Acronycta oblinita.*
10.35.	Green caterpillar.
10.38.	*Heliothis dipsaceus.*
10.41.	*Heliothis dipsaceus.*
10.46.	Clay-colored grasshopper.
10.48.	Spider.
10.50.	Miller (noctuid).
10.52.	Clay-colored grasshopper nymph.
10.54.	Miller (noctuid).
A. M.	
11.02.	May-fly.
11.02½.	May-fly.
11.15.	Green caterpillar.
11.20.	Miller (noctuid).
11.21.	Black chrysalis.
11.22.	Saw-fly larva (?).
11.25.	Spider.
11.26.	Grasshopper (*Melanoplus*).
11.30.	*Heliothis dipsaceus.*
11.30½.	May-fly.
11.32.	Spider.
11.34.	Grasshopper (*Melanoplus*).
11.34½.	Saw-fly larva (?).
11.36.	*Acronycta oblinita.*
11.39½.	May-fly.
11.47.	Cutworm.
11.48.	May-fly.
11.50.	Cutworm.
11.51.	*Heliothis dipsaceus* (2).
11.59.	*Heliothis dipsaceus.*
P. M.	
12.02.	*Heliothis dipsaceus.*
12.06.	Spider.
12.07.	*Heliothis dipsaceus.*
12.09.	Cutworm.
12.11.	Spider.

The mother wren thus made 110 visits to her little ones in four hours and thirty-seven minutes, and fed them 111 insects and spiders. Among these were identified 1 white grub, 1 soldier bug, 3 millers (Noctuidæ), 9 spiders, 9 grasshoppers, 15 May-flies, and 34 caterpillars. On the following day similar observations were made from 9.35 a. m. till 12.40 p. m., and in the three hours and five minutes the young were fed 67 times. Spiders were identified in 4 instances, grasshoppers in 5, May-flies in 17, and caterpillars in 20.

Previous to the observation of this brood of wrens a collection of adult and nestling wrens was made. Their food is shown in diagrams (Pl. IX, fig. 1).

Barn Swallow.—The food of seven nestling barn swallows (fig. 16) collected June 17, 1899, consisted of beetles (*Onthophagus pennsylvanicus*, *Aphodius inquinatus*, *Agrilus* sp., and Rhynchophora), parasitic wasps (*Chalcis* sp., Ichneumonidæ and *Tiphia inornata*) and flies (Leptidæ, *Chrysops* sp., *Lucilia cæsar* and other Muscidæ), bugs (Capsidæ), May-flies, and snails. The vertebræ of some small fish, which may have been taken to aid the gizzard in digesting the food, were also found in the stomachs.

Bank Swallow.—An examination was made of the stomachs of 83 young bank swallows collected a few miles above Marshall Hall from a colony in the face of the river bluff. They were probably the progeny of the swallows that frequently circled over the farm. The food of the nestlings and that of adults collected during the nesting season is shown in diagrams (Pl. IX, fig. 2).

Purple martins, which came from a colony of somewhat more than a dozen pairs nesting in boxes on poles at Bryan's Point, a mile above the house, were often seen circling about the farm. On June 28, 1902, I visited the colony and found the parent birds feeding the young soldier bugs, ants, fig-eaters (*Allorhina nitida*), and dragon-flies (*Libellula* and Agrionidæ).

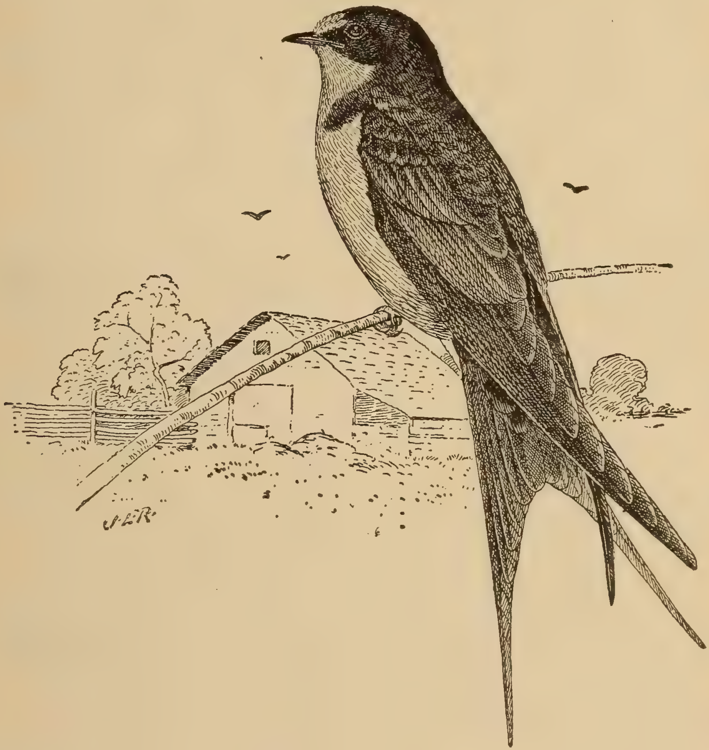

FIG. 16.—Barn swallow.

Three young downy woodpeckers which were collected May 28, 1896, had fed principally on ants, but had also eaten spiders, ground beetles, and caterpillars.

Catbird.—The difference between the food of adults and young belonging to a highly frugivorous species is well illustrated in the case of the catbird, and is shown in diagrams (Pl. IX, fig. 3), which were made principally from results obtained at Marshall Hall.

Crow and Crow Blackbird.—Such granivorous birds as crows and crow blackbirds feed their young mainly insects. Sufficient material to illustrate this habit was not available at Marshall Hall, but the diagrams here given (figs. 17 and 18), based on results obtained elsewhere,[a] will serve to show it. By the time the young are ready to leave the nest, however, they are fed to a large extent on either grain or fruit, according to locality. In the Middle West they take grain and in the East generally fruit. Both crows and crow blackbirds do great service by feeding to their young not only cutworms and grasshoppers, but also large numbers of weevils and May-beetles.

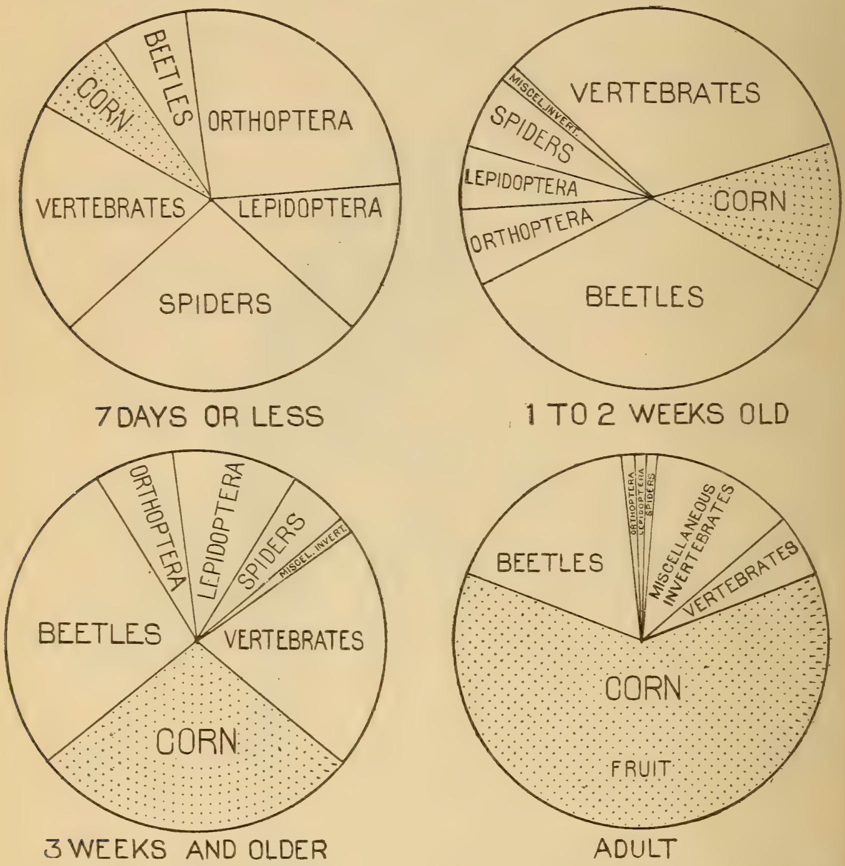

FIG. 17.—Diagram showing proportions of food of American crow (*Corvus americanus*), young and adult.

GENERAL REMARKS.

Consumption of caterpillars and grasshoppers is the largest benefit derived from the presence of nestlings on the farm. The parent birds

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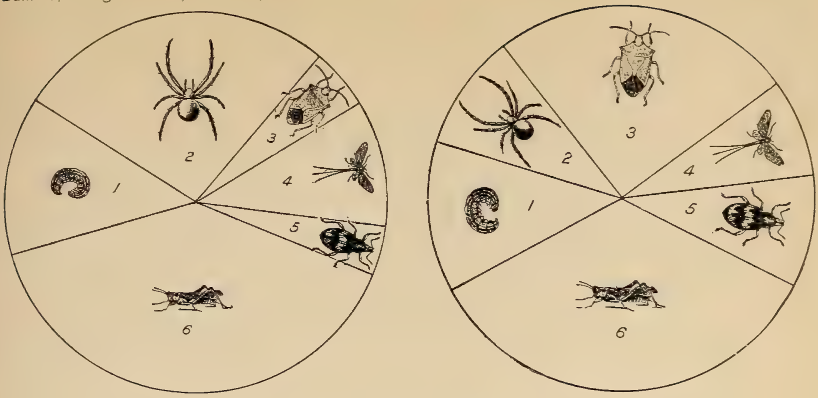
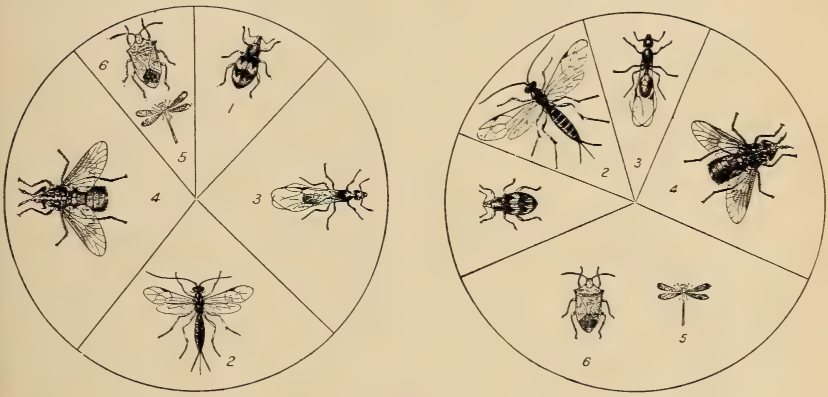
[a] Most of the stomachs of young and adult crows used in the investigation on which the results shown in the diagram are based were obtained at Sandy Spring, Md.; and most of those of young and adult crow blackbirds came from Onaga, Kans.

PLATE IX.



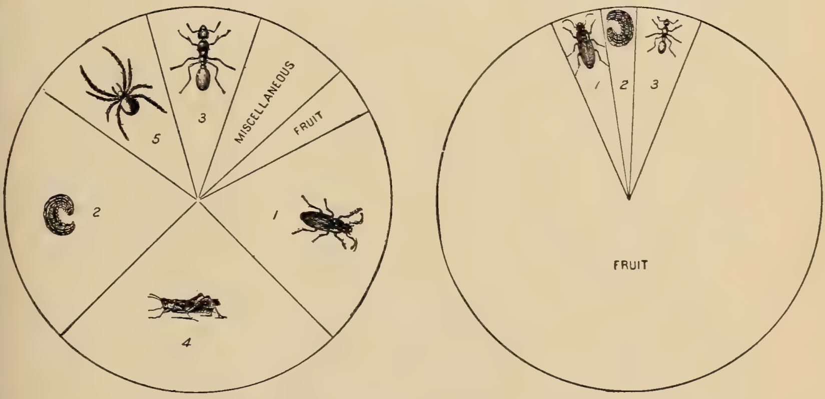
NESTLING. Fig. 1.—House Wren. ADULT.

[1, Cutworm ; 2, spider ; 3, stink-bug ; 4, May-fly ; 5, weevil ; 6, grasshopper.]



NESTLING. Fig. 2.—Bank Swallow. ADULT.

[1, Weevil ; 2, ichneumon-fly ; 3, winged ant ; 4, fly ; 5, dragon-fly ; 6, stink-bug.]



NESTLING. Fig. 3.—Catbird. ADULT.

[1, Ground-beetle ; 2, cutworm ; 3, ant ; 4, grasshopper ; 5, spider.]

FOOD OF NESTLINGS AND ADULTS OF THREE COMMON BIRDS.

[The diagrams show the proportions of the various orders of insects in the food, each order being represented by the insect belonging to it that is most commonly eaten by the bird whose food is shown. (In the case of the Hymenoptera a division is sometimes made between the parasitic members of the order, which are very useful, and those that are neutral or injurious. The figures of insects are reduced from cuts kindly loaned by Dr. L. O. Howard.)]

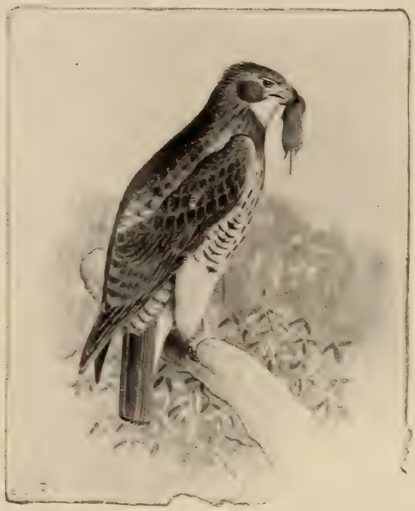


FIG. 1.—RED-TAILED HAWK.

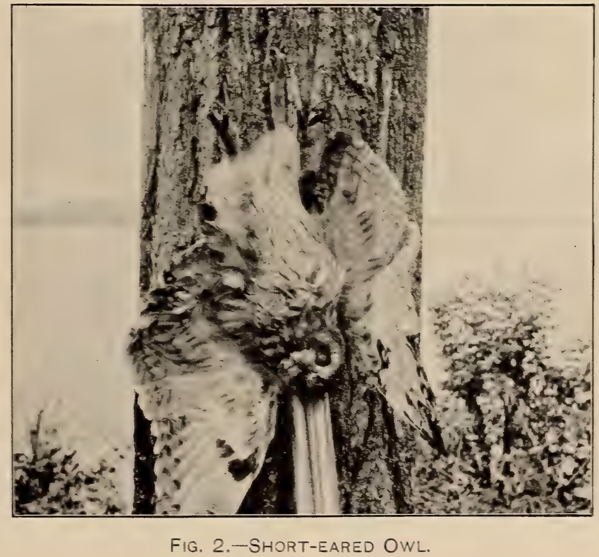
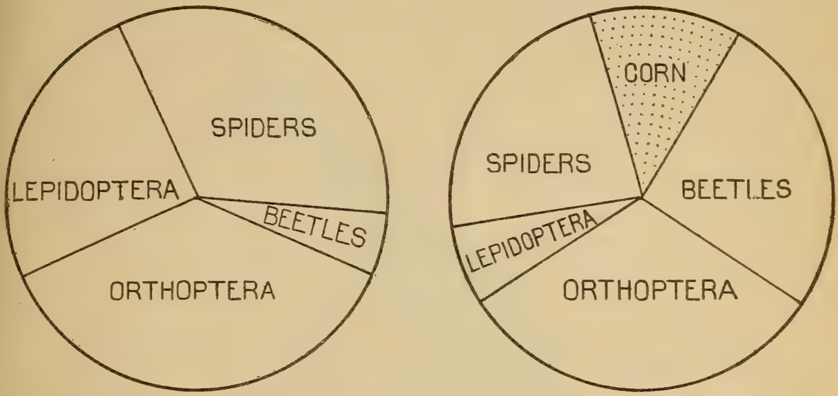
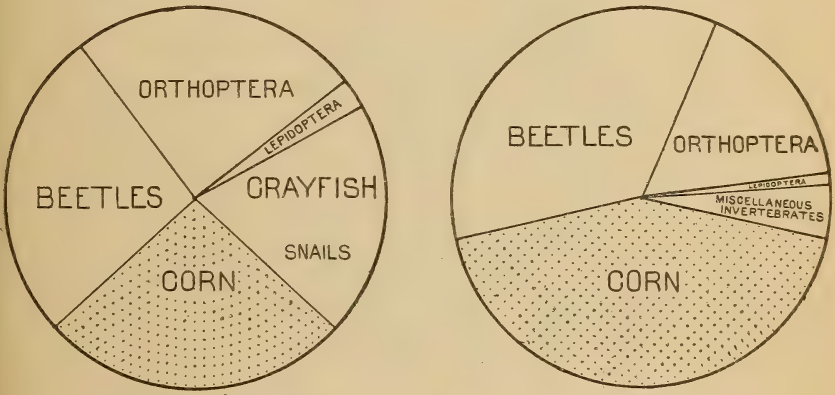


FIG. 2.—SHORT-EARED OWL.

hunt out these insects when they are not abundant and even when they are rare. At the time of the foregoing observations of orchard orioles, house wrens, and grasshopper sparrows, caterpillars and grasshoppers were comparatively scarce; yet the parent birds, though they chose insects for their own eating from more abundant species, hunted far and wide for these rare ones to feed their young. At Marshall Hall



NEWLY HATCHED HALF GROWN



NEARLY FLEDGED ADULT

FIG. 18.—Diagram showing proportions of food of crow blackbird (*Quiscalus quiscula æneus*), young and adult.

the protection and encouragement of birds at nesting time is of prime importance. Adults of the most numerous species on the farm are either highly frugivorous or highly granivorous, hence the insectivorous habits of nestlings help considerably to establish the beneficent relation of birds to the farm economy.

III.—VERTEBRATE FOOD.

POULTRY AND GAME.

Crows.—Certain species of the larger birds were found to take vertebrate food. Crows and some of the hawks and owls destroyed useful small birds and also game and poultry. On the Hungerford farm crows were observed killing newly-hatched turkeys, and on the Bryan farm they were not uncommonly seen carrying off little chickens. The most serious offense against the poultry interest, however, was the habitual stealing of eggs. During April, 1900, a crow came every day and robbed a hen's nest in the side of a hayrick at a little distance from buildings. Often he would be seen waiting on a fence near by until the hen announced that the egg had been laid, when he would dash down and make off with his booty. Such depredations could be avoided by furnishing the hens with such facilities that they would no longer lay in exposed situations. As it is, incessant war upon the crow is necessary to prevent heavy loss to poultry on this farm. Game birds also suffer. On May 15, 1900, a crow was caught on the forested slope beyond the swamp (Pl. VII, fig. 2) in the act of pillaging the nest of a ruffed grouse. Crows also despoiled the nest of a bobwhite, a species which probably suffers oftener than the ruffed grouse.

Eagle.—The bald eagles that are frequently seen at Marshall Hall do not disdain to pick up a little game now and then. Early in March, 1897, a crippled scaup duck was seen in the river a hundred yards from the house chased by an eagle and diving every time its pursuer swooped down on it. When the quarry was almost tired out the eagle was shot, and fell into the river with a broken wing, but it had sufficient strength left to lacerate a pointer that attempted to retrieve it. On November 15, 1900, an eagle was seen flying over the house gripping in its talons a live coot, which turned its head rapidly from side to side in its struggles to escape. During the hunting season eagles get a good part of their food by picking up wounded ducks. They also prey on domesticated ducks. In the first week of August, 1896, they carried off several ducklings that went down to the swamp. The royal brigands relish chicken, and in the nest of one pair that came to the farm was the carcass of a recently killed Plymouth Rock hen.

Cooper Hawk.—With the exception of the English sparrow, the Cooper hawk (fig. 19) probably does the least good and the most harm of all the birds of the farm, for it subsists almost entirely on wild birds and poultry. It very frequently steals little chickens, and constantly preys on the bobwhite and useful insectivorous or seed-eating small birds. During November, 1900, the bobwhites were so persecuted that they were seldom found far from cover. In one instance a hawk was seen to swoop to the ground and rise with a victim, the identity of which was afterwards made sure by the discovery of the feathers of a cock bobwhite on the spot where the hawk had struck.

Sharpshinned Hawk.—The sharpshinned hawk, congener of the Cooper hawk, is also a harmful species. It was frequently observed pursuing native sparrows, and on November 15, 1900, was seen tearing a mockingbird to pieces. The smaller birds suffer most in autumn. On the 15th of November, 1899, I was observing a score of cardinals, juncos, white-throated sparrows, fox sparrows, and song sparrows that were eating ragweed seed in wheat stubble by the negro cabin. Suddenly the whole flock sprang into the air and flew straight toward me and into the bushes behind me, twittering with fright. Their swiftness just saved them from a sharpshinned hawk, which swooped and struck the ground where they had been feeding. It was two hours before they dared to leave their shelter and feed again on weed seeds of the stubble-field. These two species of hawks patrol the farm

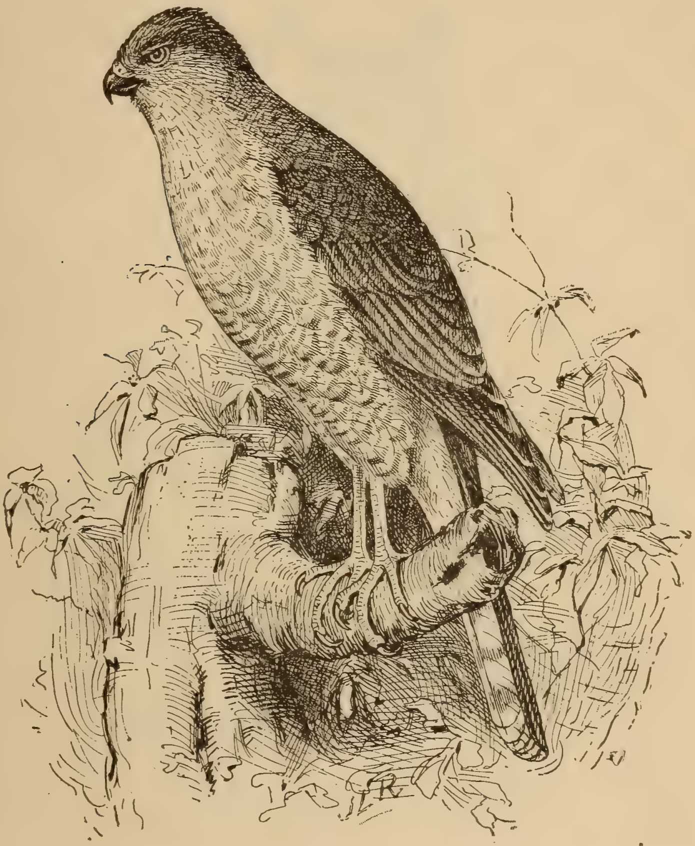


FIG. 19.—Cooper hawk.

so vigilantly in autumn and winter that birds which eat weed seed are kept in constant terror, and are unable to do all the good they might accomplish were it not for their tireless enemies. Owing to the depredations of these two hawks, all hawks without distinction have been relentlessly persecuted by man, although very few are actually detrimental to agriculture.

Great Horned Owl.—Only one of the several species of owls occurring at Marshall Hall is harmful, namely, the great horned owl (fig. 20).

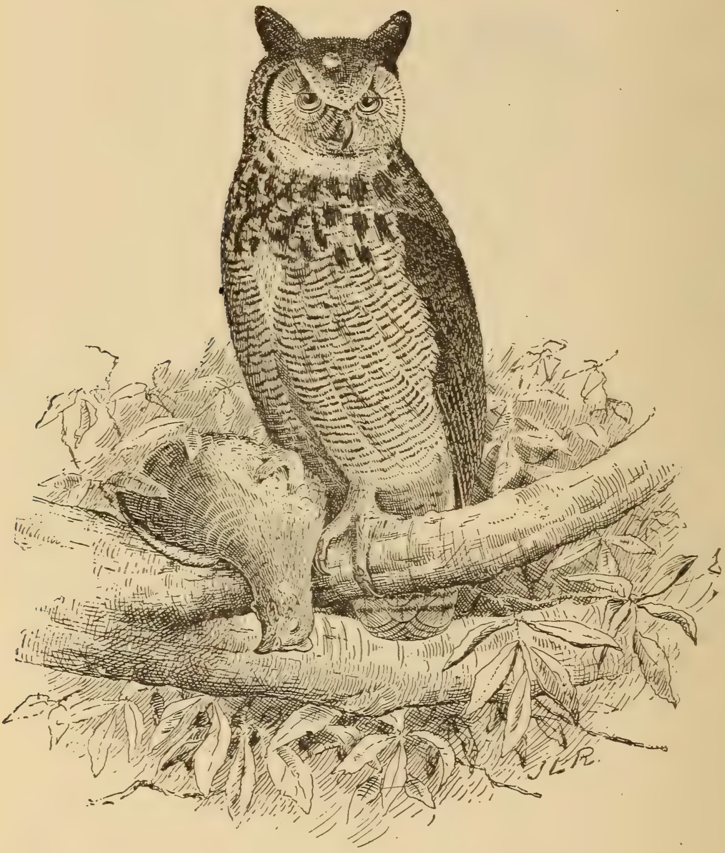


FIG. 20.—Great horned owl.

It occasionally makes inroads on poultry that is not housed. In December, 1897, a great horned owl carried off a full-grown hen from her roost in a tree beside the negro cabin, and on five of the first ten nights of May one came and took hens from the cedar trees behind the house. On the night of the sixth visit a steel trap baited with a hen secured the robber. A year seldom passes without losses from this fierce and powerful bird of prey.

FISH.

Several species of birds on the farm are known to feed on fish, but they are so few in number and take food fishes so seldom that as far as has been learned they cause no material injury to fishing interests, which at this point on the river are of considerable importance. A pair of kingfishers were often seen fishing along the shore in front of the Bryan house (Pl. III, fig. 2), and five nestlings taken from the bluff on the Hungerford place had been fed wholly on fish. Herons, including the night heron, the green heron, and the great blue heron, were frequently seen wading in shallow water, spearing fish with their long, pointed beaks. Two green herons that were collected had eaten silversides (*Menidia notata*) and mummichogs (*Fundulus heteroclitus*). Ducks, particularly the mergansers, feed to some extent on fish. Two hooded mergansers, collected November 15, 1900, had eaten respectively 12 and 20 tiny fish. Gulls are decidedly more piscivorous than ducks. During November the herring gull and the ring-billed gull fished by the dozen out in the river between the farmhouse and Mount Vernon (see Pl. I, frontispiece fig. 2). In the same place the osprey was once in a while seen plunging after his prey. The bald eagle was observed catching fish, but more often it feeds on those that it finds dead.

CARRION.

Some birds, notably eagles, crows, and buzzards, feed at times largely on dead fish. Eagles may be seen along the river scanning the shore for those cast up by the tide. May 19, 1899, an eagle flying over the farm dropped an eel 26 inches long that had evidently been taken as carrion. Gulls, also, undoubtedly pick up a good deal of such food. Crows and buzzards are valuable scavengers of dead fish cast up at low tide during the last of April and the first of May, when the fishing season is at its height. These fish are small, principally sun-fish, white perch, and shad, that were fatally injured by nets. Observations on May 5, 1901, showed the whole river front of the farm strewn with decaying fish, which gave out such a stench that one could not sit comfortably within several hundred yards of the beach. Some 40 buzzards were feeding on the carrion all day. On close inspection they were seen to be selecting that which was most badly decomposed. Crows in almost as large numbers and several crow blackbirds were also feeding, but they commonly took that which was less decayed. Several crows came repeatedly to the shore of lot 1, picked up fish, and carried them to their nests in the woods. By abating this nuisance crows and buzzards do a service that is appreciated by the occupants of the farmhouse.

Buzzards are also useful in removing other carrion. Stock that dies on the farm is never buried, but is left for them. November 16, 1899, some notes were made on the manner in which a carcass was disposed of. On the edge of lot 1, near the mouth of Persimmon Branch, lay a horse that had died two weeks before. Fully 30 buzzards closely attended it, and some were to be found at work on it at any hour of the day, while the others, tired of gorging, sat around on a rail fence, stretching their wings and preening. At night they all roosted together in oak trees within a hundred yards of the horse, as if they wished to keep near the food. A year later another horse was given over to the buzzards. The buzzards did not in either case tear open the skin to expose the large muscles, but if the weather had been hot they might have eaten these as well as viscera. Crows are seldom known to feed on dead stock, but during the March blizzard of 1898 they were almost starved, and resorted with buzzards to a dead cow. Buzzards dispose of the entrails and other refuse of pigs, fish, and chickens, which are thrown to them in a certain place where they have learned to expect it.

MAMMALS.

Mice.—The crow and several other birds of the farm do some good by destroying injurious mammals. In the vicinity of the storage barn a loggerhead shrike was often to be seen. Here it impaled its prey on thorns of the osage orange hedge and on the barbs of a wire fence. In one instance a house mouse was found spitted on the fence. If extended observations could have been made it is probable that mice would often have been found in the larder of this useful little shrike. The crow takes mice at every opportunity. On February 21, 1900, signs of its work appeared near the runways of meadow mice in a wheat-stubble patch of lot 5, in the form of crow tracks in the light snow, holes pecked in the earth, and at one place spatters of blood and tufts of mouse hair. Hawks feed habitually on these mice. In January, 1898, when there were several inches of snow on the ground, a red-tailed hawk (Pl. X, fig. 1) shot in the road by the negro cabin held in its talons the warm body of a meadow mouse. November 15, 1900, a marsh hawk skimming over lot 2 suddenly dived into the brown broom-sedge. As it rose it was killed and a meadow mouse dropped from its clutch. In its stomach the head and hind quarters of another were found. This species of hawk is undoubtedly the most useful mouser on the farm and should have due credit, for mice cause much injury there to fruit trees, sweet potatoes, and grain. The short-eared owl (Pl. X, fig. 2) has several times been observed preying upon meadow mice. This bird, the marsh hawk, and the red-shouldered hawk, which are all excellent mousers and rarely attack poultry or birds, are continually made to pay with their lives for the depredations of the real poultry thieves of the hawk and owl tribe—the Cooper and sharp-shinned hawks and the great horned owl. The illustration of a short-eared owl here given is of a bird that had just made vicarious atonement for depredations on the poultry by the great horned owl.

Rabbits.—The marsh hawk and other large species prey on rabbits. In the last week of December, 1897, a marsh hawk was shot which had just killed one of unusual size. The crow regularly feeds on young rabbits. On March 27, 1901, several crows that were congregated in some grass land at a point 150 yards behind the house were frightened away. An empty rabbit's nest found on the spot and stains of blood on the broom-sedge told what they had been doing. The rabbit is a nuisance on the farm. It often ruins hotbeds of sweet potatoes, cuts tortuous paths through wheat fields, and nibbles cabbages and turnips. Not more than 20 miles from Marshall Hall rabbits girdled and killed 2,000 young pear trees in an orchard of 4,000 within two months.

The food of the 645 birds examined shows only 1.72 percent of vertebrate food. The reason for so small a proportion is the fact that the collection included only 19 birds that could be expected to feed on flesh.

IV.—FRUIT.

CULTIVATED VARIETIES.

Fruit forms with many common birds an important element of food. Of the 645 stomachs of native birds collected at Marshall Hall 139 contained either wild or cultivated fruit. The greatest interest naturally centers in the cultivated varieties.

Strawberries.—The earliest fruit on the farm is the strawberry. It usually ripens about the middle of May and would naturally be expected to tempt the birds. With a view to measuring their depredations on the crop, two visits were made to Marshall Hall between the 13th and the 20th of May of 1899 and 1900. A strawberry patch in the Bryan kitchen garden was watched for several days in the early morning, when birds were feeding most busily, but although catbirds, orchard orioles, and other notably frugivorous species were all around the patch, not one of the birds entered it for berries. On the Hungerford place, adjacent to the wooded dell tenanted by the colony of crow blackbirds already referred to, there was a large strawberry patch, from around which were collected 13 blackbirds, 13 catbirds, and 2 orchard orioles, but only one of them, a catbird, had eaten strawberries. On the previous day the patch was watched for several hours. Only a solitary catbird entered it and he did not take a berry. These and other observations showed that birds at Marshall Hall did not harm the strawberry crop, but, on the other hand, protected it by destroying ground-beetles, which, as has been said, injure the fruit. If catbirds were fond of strawberries, they would have made sad havoc on these farms, for they fairly swarmed amid the tangled vegetation on the river front (Pl. IV, fig. 1). Their liking for fruit is well known, and it seems strange that they should prefer winter-cured smilax berries to strawberries; yet of 13 individuals collected at this time 5 had eaten smilax berries that had hung on the bushes all winter.

Cherries.—During cherry time 227 birds were collected, 23 of which, comprising crows, crow blackbirds, catbirds, cedar birds, brown thrashers, and kingbirds, had fed on cherries and little else. Cherries ripen from the 30th of May to the 15th of June and remain on the trees for about a month. Some interesting field observations corroborated the results of the examination. On the Bryan farm cherry trees are so numerous that an observer can not keep track of the birds that fly to them, but on the Hungerford farm, where the trees are few, there is no difficulty in taking notes. One large black ox-heart tree in a hedge row several hundred yards from the river was watched June 15, 1899. From sunrise till sunset there was seldom an interval of ten minutes when it was empty. Catbirds flew up to it from the matted vines on the river front; thrashers came from inland thickets; and kingbirds flew over from apple and pear orchards. A flock of half a dozen cedar birds every now and then came to it and fed eagerly, and a crow made it a base of supplies for her greedy brood in a neighboring sycamore. The colony of crow blackbirds that had nested in the adjacent dell were, however, the most regular and frequent visitors. They had taken their recently fledged young to a swamp a quarter of a mile away, and all day long flew back and forth in a 'bee line' between that and the cherry tree, often meeting one another in the journey and sometimes numbering three or four in the tree at one time.

As an experiment looking toward the possible protection of cherries, a screech owl with a clipped wing was placed in a cherry tree near the Bryan farmhouse. Several catbirds that came to pillage made an outcry at first, but soon attacked the cherries, regardless of the owl. An English sparrow, a red-eyed vireo, and two orchard orioles that entered the tree were at first much disturbed, but were all eating cherries within fifteen minutes. Since the screech owl does not feed on birds to a considerable extent, they probably did not recognize in him a dangerous enemy. The presence of a great horned owl or a Cooper hawk would doubtless have had a completely deterrent effect. The cherry crop at Marshall Hall is not marketed, nor is one hundredth of it ever picked; the proportion consumed by birds is, consequently, of no economic importance.

Other orchard fruit.—When the cherry season was over the birds that had shown themselves notably frugivorous were expected to turn their attention to the orchards of plums, peaches, pears, and apples. While these fruits were ripe 161 birds were collected, but not one appeared to have molested them. Many had taken fruit, but had drawn on nature's supply instead of man's. All the trees in the orchard were watched, but birds apparently did not rob them, a fact in striking contrast with the notorious pillaging by birds in the fruit-growing regions of California. In California birds also do much damage in spring by eating the buds and blossoms of fruit trees, but at Marshall Hall no appreciable loss is caused in this way. White-throated sparrows occasionally feed on buds and blossoms, and on one occasion (April 25, 1901) three of these birds were seen mutilating pear blossoms in the kitchen garden, but beyond this no example of such depredations was observed.

Grapes.—Grapes are not raised for market at Marshall Hall. In the Bryan kitchen garden there is a trellis for family use, but birds did no appreciable injury to the grapes that grew on it.

Tomatoes.—Catbirds were reported to be ruining the tomato crop on the Hungerford farm during the third week of June, 1899. The place was visited and every tomato that had reddened at all was found to have been pecked. The injury was causing heavy loss to the farm, for the fruit at that time brought a high price. The patch was watched for several hours, but not a catbird entered it. Nine chickens, however, stole up from a small house on the shore and went from plant to plant, eating greedily. To make doubly sure that catbirds had no share in the mischief, 15 individuals were collected from the neighboring dell and the bushes about the patch, and examination was made of the stomach contents. No trace of tomatoes was found.

Melons.—The only fruit grown for market that suffered from the depredations of native birds was the melon, and it was attacked by only one species—the crow. In numbers from three or four to a dozen at a time crows began to injure melons about August 1 and continued for three weeks, attacking both watermelons and cantaloupes, but preferring the former. Each crow would peck at a melon a dozen times or so and then pass on to another. If no protective measures had been taken, the crop would often have been a total loss, and in spite of all efforts from 5 to 20 percent of the melons grown at all distant from buildings were punctured (fig. 21). Carcasses of crows, strings with long white streamers attached, an improvised miniature windmill that revolved and struck noisily against a piece of metal, and a bit of bright tin suspended from a string so that it turned with every breath of air and reflected the sun about the field were some of the devices used to frighten the wary and suspicious marauders. In 1873, 1874, and 1875, when the melon crop was so important that 4 or 5 acres, containing from 3,000 to 4,000 hills, were given up to it, the method of protection used in the rice fields of the South was adopted: from sunrise to sunset a negro with an old musket and plenty of powder watched from a brush shelter in the middle of the field and, whenever a crow appeared, frightened it away with a thundering report. If the field was left unguarded for any length of time, the crows were sure to make havoc among the melons. Since they would never come within gunshot if they knew anybody was watching, attempts were made to destroy them by a stratagem; two men would enter the brush house and one of them would soon leave, hoping to delude the crows into thinking that the house was empty, so that they would venture within range of the second man's gun. The plan worked only in the first few trials, however. The farmers at Marshall Hall maintain that crows can count up to three, for they could not be hoodwinked unless three men left the house and a fourth remained to shoot.

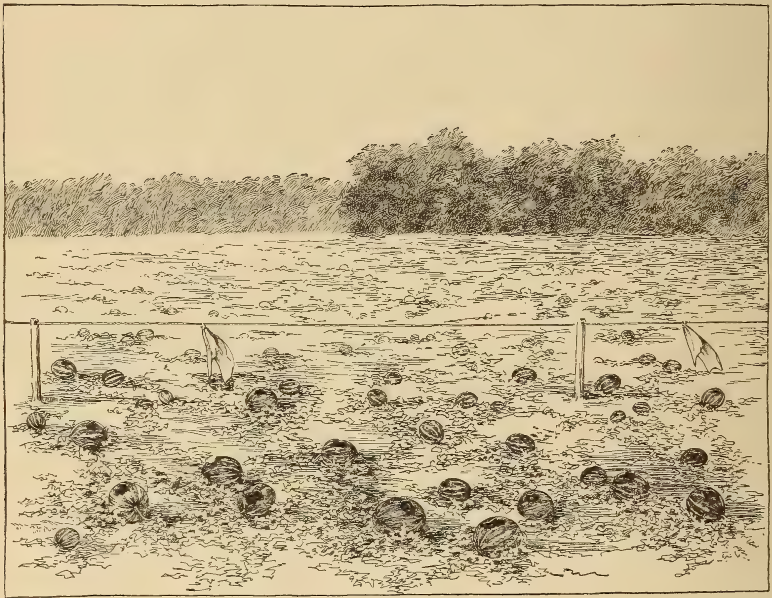


FIG. 21.—Melons damaged by crows.

WILD FRUIT.

Wild fruit formed 10.12 percent of the food of the 645 birds collected, and had been eaten by 120. Both examination of stomachs and notes of field work showed how important an element it is in the food supply of many species.

Smilax.—The catbird, which, with the possible exception of the cedar bird, is the most conspicuous frugivorous species on the farm, ate in May, when it arrived from the South, the winter-cured berries of smilax. Out of 13 individuals collected May 17–20, 1899, 5 had made from 15 to 40 percent of their diet on these husks in preference, as has already been said, to the feast spread in the strawberry patch.

During May cedar birds and crow blackbirds also relished them, and the robin, when hard pressed on its arrival, during the last of February, was seen to eat them eagerly.

Mulberries.—The first wild fruit that offers a freshly ripened supply at Marshall Hall is the mulberry, and it lasts from the end of May until the end of June. On May 29, 1896, observations were made of birds feeding in a large mulberry tree in the wooded gully of the hog lot. A pair of downy woodpeckers that bred in a willow stub near by were twice noted eating the berries. A Baltimore oriole, probably a late migrant, fed on them eagerly. Several pairs of orchard orioles and kingbirds which nested together near the house came to the tree at frequent intervals. The kingbirds would balance themselves on the topmost sprays and pluck the berries as gingerly as if they had been insects. Two pairs of red-eyed vireos and a pair of white-eyed vireos haunted the mulberry and adjacent trees, now and then taking a berry, but most of the time apparently eating insects. A cardinal that nested on the shore of the calamus swamp, 200 yards distant, made one trip to the tree, but was accidentally frightened out of any subsequent visits. Crows came from the woods 25 rods away and three blue jays journeyed at least a quarter of a mile for the fruit. Song sparrows frequently hopped about on the ground beneath the tree and picked up fallen fruit. A flock of eight cedar birds fairly gorged themselves. At intervals they would repair to cedar trees on the brink of the gully and sit as motionless as if they were literally stuffed, until digestion relieved their repletion. Then they would apparently wake up, preen their pretty plumage, and, regaining activity one after another, would presently with one accord fly back to the berries with renewed appetite. They appeared to spend their whole time alternately feasting and napping. The catbirds were about as gluttonous, but not so lazy. They came to the tree from the neighborhood, from the house, and from the river bluff. Hardly a period of five minutes passed in which not one was among the branches, and three or four were often present at once. They were so tame that it was possible to see just how they fed. One would pluck a berry, sometimes an inch long, bolt it whole, and then stand almost choking, with mouth wide open, while the berry, which made a great lump in its gullet, slowly passed into its stomach. Then with evident relief it would hop about and perhaps sing a few bars of song. There was no luxurious idleness among the catbirds. As soon as they had eaten they either sang or flew away to resume nest building, incubation, or the feeding of their young. Mulberries formed at this season the greater part of their food.

A list follows of the birds that were observed feeding on this fruit or that were found by examination to have eaten it.

List of birds feeding on mulberries.

Blue jay.
Crow.
Crow blackbird.
Orchard oriole.
Baltimore oriole.
Cardinal.
Carolina chickadee.
Song sparrow.
Red-eyed vireo.
White-eyed vireo.
Downy woodpecker.
Cedar bird.
Catbird.
Kingbird.
Bobwhite.

Raspberries and blackberries.—The black raspberry, the dewberry, and the blackberry, which are the wild fruits that, in the order given, ripen next, are too plentiful and too widely distributed for much remunerative field observation. The following list of birds that ate them was prepared chiefly from stomach examination:

List of birds feeding on raspberries and blackberries.

Bobwhite.
Summer redbird.
Cardinal.
Song sparrow.
Field sparrow.
Brown thrasher.
Catbird.
Orchard oriole.
Bluebird.
Crow.
Kingbird.
Red-headed woodpecker.
Cedar bird.

A few field notes on the destruction of these fruits were made, however. Catbirds were seen, May 30, 1896, in black raspberry bushes near the house, eating half a dozen berries apiece. During June, 1899, lot 2 was overrun with a network of dewberry vines. Here, on the 17th, bobwhites were observed walking from vine to vine, picking the berries in a systematic fashion. During 1896 blackberries fruited heavily, and birds were not slow to take advantage of the generous food supply. July 12 a red-headed woodpecker was observed to come and feed on the berries with catbirds and orchard orioles, and a kingbird was seen to fly down to a bush, hover beside it, and pluck a berry. In early August, 1898, two field sparrows were seen in several instances selecting fruit which had dried on the bushes in preference to that which was fresh and juicy. They may have done this to obtain the seeds of the berry and extract their meat. A number of song sparrows picked up blackberries from the ground as they had mulberries. Since this species is often very abundant in cultivated patches of blackberries and takes 10 percent of its food from this fruit in its season, the habit of feeding on fallen berries may be fortunate for the horticulturist. Rubus fruits are not raised for market at Marshall Hall, hence it is unimportant whether the birds eat them or not; if they were, and if there were no other fruit available, the abundant frugivorous birds would probably decrease the profits considerably.

Elderberries.—Elderberries ripen next, usually during the latter half of July. There are so few of them on the farm that the record is scanty, but field notes made August 5, 1898, show how much they are relished. A large elder bush was watched from 1.40 to 2.50 p. m. The observations may be thus summarized:

Detailed account of birds feeding on elderberries.

1.45: A song sparrow hopped along under the bush and picked up a fallen berry.
1.51: A downy woodpecker alighted on the main stalk and, ascending within reach of a cluster, ate 2 berries.
1.58: A female orchard oriole came and fed.
2.00: A catbird ate several berries.
2.03: A red-eyed vireo took 1 berry.
2.09: A catbird ate 3 berries.
2 11: A pair of red-eyed vireos flew into the bush; one took a berry and scurried away, but the other remained long enough to eat 4 berries.
2.12: A male redbird dashed in, took a berry, and dashed out.
2.13: A crow dropped clumsily into the bush, but after one peck at the fruit espied me and flew away with loud clamor.
2.15: A catbird took 1 berry.
2.16: A white-eyed vireo took 3 berries.
2.20: A catbird took a berry.
2.23: A female summer redbird came shyly and hurriedly ate several berries.
2.24: A catbird took a berry.
2.25: Another catbird picked at a cluster rapidly for one minute, swallowing in that time 20 berries.
2.27: A red-eyed vireo, poised in the air like a humming bird, ate several berries from the same cluster.
2.28: A female cardinal ate a berry.
2.30: A catbird ate 10 berries in a minute, rested, and
2.33: Took several more.
2.35: A female summer redbird, bending a berry stalk under her weight, leisurely plucked 5 berries from the drooping cluster.
2.37: A catbird ate 4 berries, sat and preened its feathers, and
2.50: Ate 17 more.

Wild cherries.—The wild black cherry (*Prunus serotina*) is plentiful at Marshall Hall, but as a rule birds did not congregate about it as they do in more northern States. The following species were found feeding on it:

List of birds feeding on wild cherries.

Catbird.
Kingbird.
Phœbe.
Song sparrow.
English sparrow.
Crow.
Orchard oriole.
Red-headed woodpecker.

Blueberries.—Blueberries, though a staple article of birds' diet, are so scarce at Marshall Hall as to be unimportant. Tufted titmice and catbirds have been noted feeding on them at the southern corner of lot 4.

Other wild fruits.—With the waning of summer there comes such an abundance and variety of wild fruit that birds scatter over wide areas of the farm, and observation of their feeding habits yields only desultory results. There are, altogether, more than a score of wild fruiting plants at Marshall Hall, which furnish food to at least 30 kinds of birds. Some of them, such as sassafras, blackberry, elder, and wild cherry, drop their berries shortly after ripening them, while others, such as hackberry, catbrier, and sumac, keep theirs well into winter and even until spring. The bountiful supply of late fruit is most noticeable just after the falling of the leaves. Then one may see large trees festooned with the burdened vines of bittersweet, woodbine, catbrier, and wild grape. Besides the climbing plants, many shrubs and trees are laden with fruit. The low horse-nettle is bright with yellow berries; the rank pokeweed bends under long grape-like bunches of dark purple fruit; and the persimmon is hung with yellow globes. The sour gum has dropped its deep-blue berries and light-red leaves together, but the holly is set thick with scarlet clusters that will glow all winter amid its shining green.

Some of the tastes exhibited by birds in their selection of fruit are interesting and singular. Catbirds and vireos have been known to pass by ripe blackberries and elderberries and choose green wild cherries and sassafras berries. Many birds eat sumac berries, which are practically all seeds and would seem to be about as satisfactory food as so much gravel. Fully a dozen species select the berries of black alder, which are as bitter as quinine. Cedar berries, a favorite food with birds, have an effect on the human system like cantharides, while the berries of pokeweed, nightshade, and poison ivy contain dangerous poisons. If birds are not immune from the toxic effects of these berries, one may question whether they do not take them for stimulation, as man takes tobacco and alcoholic beverages.

Poison ivy is eaten by practically all the frugivorous birds of the farm. A crow that was shot November 15, 1900, had 144 poison-ivy seeds in its stomach. The pokeberry is also a favorite fruit. Mockingbirds and catbirds that were collected had fed on it so freely that their intestines were discolored by its juice. During February, 1900, the snow was stained in several places by bright red spots with a hole in the center an inch or more deep, at the bottom of which was a mass of fruit pulp and pokeberry seeds. These deposits proved to be excreta of cardinal grosbeaks that had eaten the berries, the heat from the droppings having sufficed to melt the hole in the snow. Nightshade berries (*Solanum nigrum*) were eaten by several birds of the farm, especially by the bobwhite. During February and November, 1900, a few sapsuckers, downy woodpeckers, bluebirds, and myrtle warblers, together with dozens of flickers and robins, and scores of cedar birds and purple finches, fed on the spicy, stimulating berries of the red cedar.

Distribution of seeds by birds.—The large consumption of wild fruit results in a wide distribution of seeds, which are voided by birds and germinate where they are dropped. Some observations on crows will illustrate this dispersion. On November 17, 1899, a large flock on the wing was noticed in the distance, at a point opposite Fort Washington, several miles above Marshall Hall. They came on down the river in a line that at times stretched almost from one bank to the other. When they neared Marshall Hall they circled several times and finally alighted on the shore of the Bryan farm, at the mouth of Persimmon Branch. The flock numbered at least a thousand, and hoarse caws and croaks gave evidence that it was made up to some extent of fish crows. After the birds had remained on the shore fifteen minutes they were put to flight by a farmer's boy, and flew on down the river, lessening to specks, and finally disappearing on the horizon. Going to the place where they had alighted, I found the sandy beach cut up for more than a hundred yards with their tracks. Many led out to the water, and floating black feathers here and there showed where baths had been taken. The most interesting trace of their sojourn, however, was several hundred pellets of fruit material, which they had ejected through their mouths and dropped on the ground. These pellets (fig. 22) were about an inch in length and half an inch in diameter. They were of a deep purplish color, due to the fruit of woodbine, wild grape, and pokeberry, of which they were mainly composed. In 50 pellets collected there were only 11 seeds of other plants—namely, holly, bittersweet, and poison ivy. Pokeberry seeds were by far the most numerous. Mr. A. J. Pieters, of the Botanical Division of the Department of Agriculture, germinated some of them, thus demonstrating the fact that they were distributed uninjured.

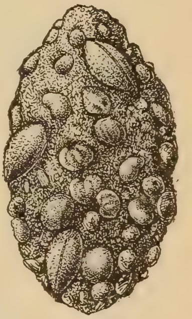


FIG. 22.—Pellet ejected by crow.

Examination of the pellets showed the interesting fact that they were made up not only of seeds (fig. 23) and skin, but largely of fruit pulp in an undigested state; indeed, many pellets appeared to be compacted masses of mashed or squeezed berries. It seems strange that the birds should have rid themselves of a substance that still contained a good deal of nutriment.

Little is known of the distribution of fruit seeds by crows during migration, but it is certain that they do this work effectively while they fly to and from the roosts where they congregate in winter, for their feeding grounds often cover an area stretching out on all sides from the roost for 50 miles or more. It appears highly probable that the crows which are found in winter at Marshall Hall roost at Woodridge, D. C., some 15 miles distant. There, in the midst of several acres of woodland, a crow dormitory is established, in which probably 100,000 crows sleep every winter night. It was visited in February, 1901, and the ground was found to be strewn with disgorged pellets containing the seeds of poison ivy, poison sumac and other sumacs, smilax, cedar, sour gum, and flowering dogwood. Some pellets, also, were made up of the hulls of corn and oats.

The distribution of fruiting plants illustrated by the crow is effected, though usually in a slighter degree, by all other frugivorous birds. Areas from which such plants and shrubs have been removed are in a short time replanted by birds. At Marshall Hall such plants thus assisted are constantly striving to secure a foothold on the arable land. This scattering of fruit seeds is illustrated by some observations made March 27, 1901. Under a large black walnut tree, remote from other woody vegetation and near the negro cabin, a two hours' search brought to view 172 fruit seeds, including mulberry, cultivated cherry, wild black cherry, wild grape, woodbine, pokeberry, cedar, sassafras, blackberry, and sumac. Under a large cedar in the middle of lot 2 seeds of the following additional fruiting plants were collected: Elder, hackberry, bittersweet, sour gum, smilax, blueberry, flowering dogwood, and poison ivy.

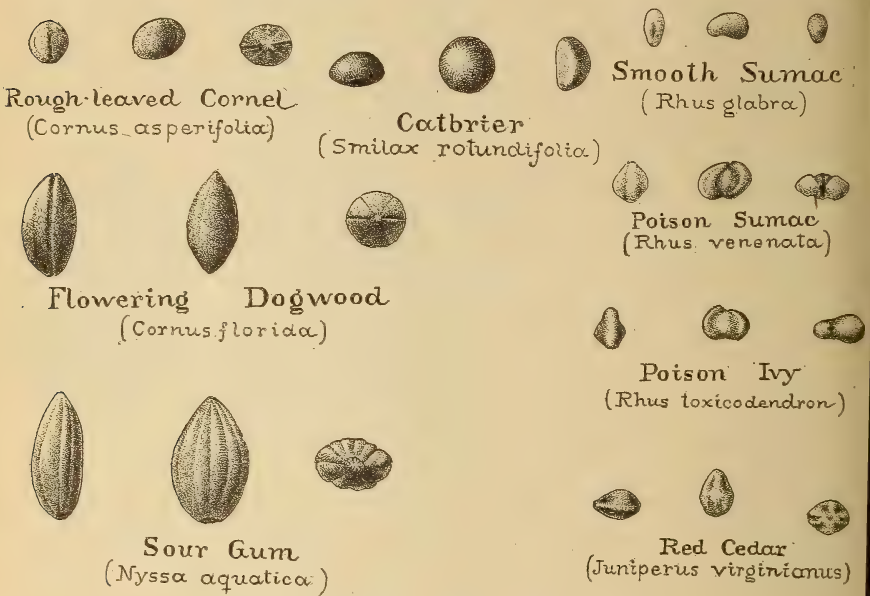

Rough-leaved Cornel
(Cornus asperifolia)
Catbrier
(Smilax rotundifolia)
Smooth Sumac
(Rhus glabra)
Poison Sumac
(Rhus venenata)
Flowering Dogwood
(Cornus florida)
Poison Ivy
(Rhus toxicodendron)
Sour Gum
(Nyssa aquatica)
Red Cedar
(Juniperus virginianus)

FIG. 23.—Some common seeds found in crow pellets.

The most striking examples of trees planted by birds at Marshall Hall are the ox-heart cherry trees that extend along the river front for half a mile. Almost as notable, perhaps, are the tall cedar trees which stand in long rows between adjacent fields (see Pl. XII, fig. 1). Scattered over the old pastures, also, little cedar trees, like fox brushes, attest the work of the winged planters, but in the arable land the rotation of crops kills all except such as may start along fence rows.

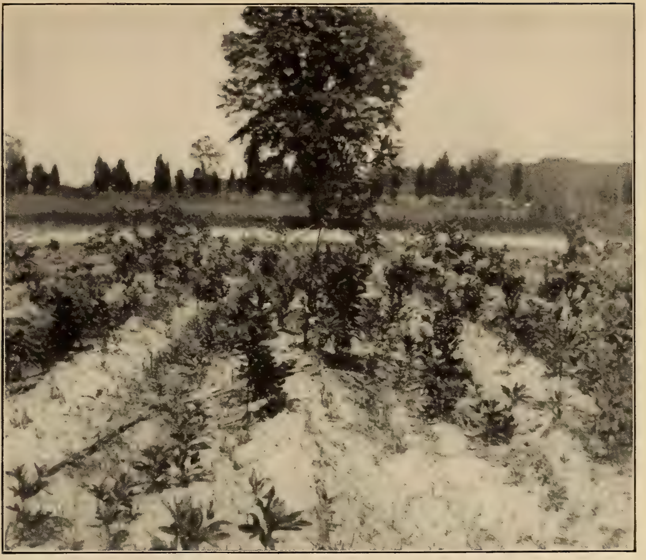


FIG. 1.—SASSAFRAS AS A WEED, IN LOT 5.

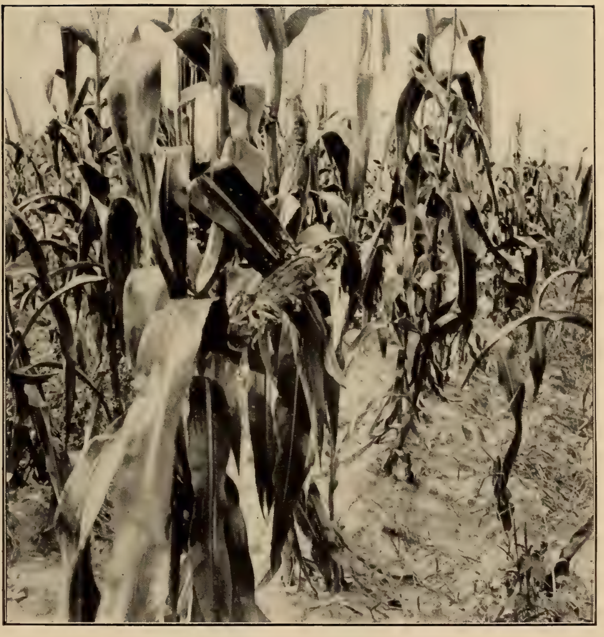


FIG. 2.—CORN INJURED BY CROWS.

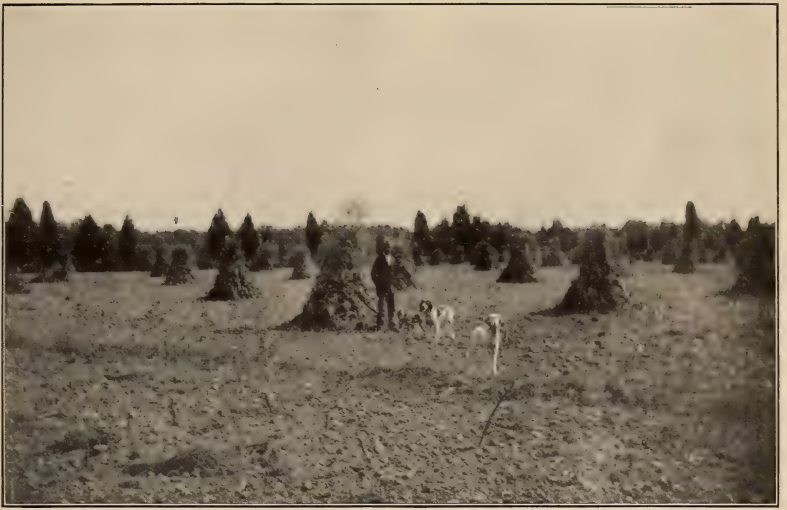


FIG. 1.—CORNFIELD, LOT 5.

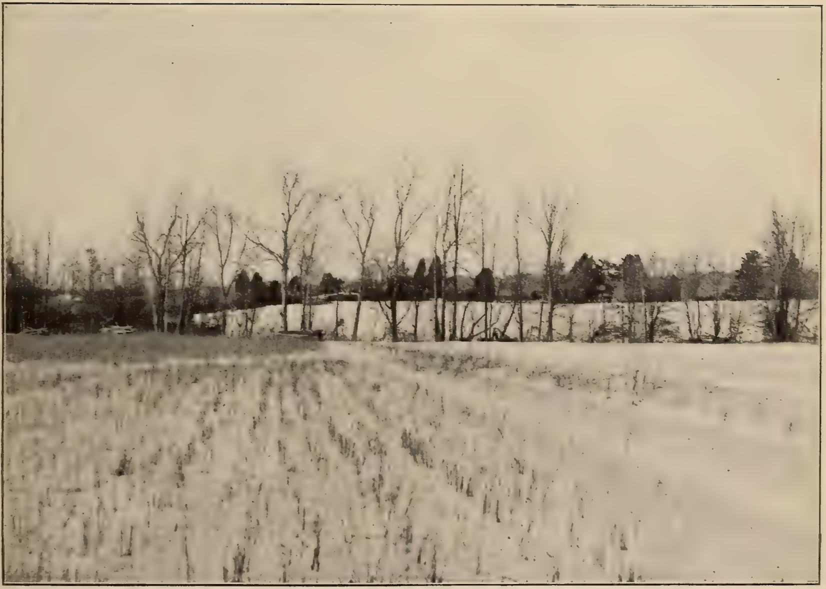


FIG. 2.—WHEAT STUBBLE, LOT 3.

The line of trees in the middle-ground marks the course of Persimmon Branch.

Sassafras planted by birds on arable land is not so easily exterminated. On the Hungerford farm it almost choked a peach orchard of several acres. On the Bryan farm it attained such a growth in a cornfield previously used for grass that it had to be cut down with brush hooks (Pl. XI, fig. 1). In another part of the same lot high-bush blackberries sown by birds had to be similarly eradicated.

V.—GRAIN.

Grain had entered into the food of 38 out of the 645 birds examined. Of these 21 had picked up waste kernels and 17 had secured valuable grain, which, however, amounted to but 1.25 per cent of the food of all the birds.

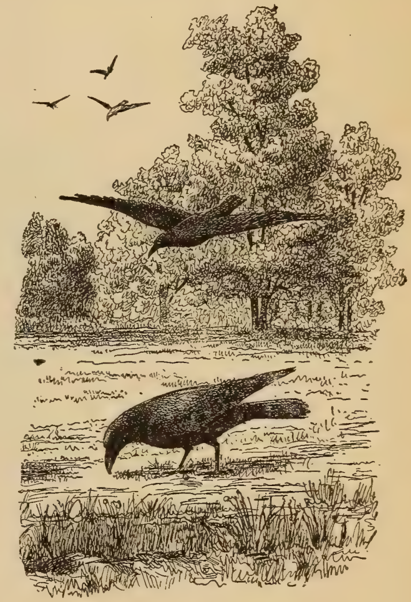


FIG. 24.—Common crow.

Crow.—The crow (fig. 24) is by all odds the worst pilferer of the cornfield. Every year at Marshall Hall, as elsewhere, a part of the field must be replanted because of his 'pickings and stealings.' In 1899 the replanting was more extensive than usual, requiring on the 39-acre field 1 bushel 2½ pecks, 46 percent of the 3½ bushels originally planted. This unusual ratio was probably caused by the failure of the cherry crop, which left the crow short of food. The protective device of tarring seed corn is employed to some extent on the Hungerford farm. In June, 1899, I planted two rows of corn, one tarred, on the edge of lot 4, near a nest of young crows. When the seed sprouted 3 kernels were pulled from the untarred row, and 7 plants were uprooted from the tarred row, the kernels of which were left intact. On May 30, 1901, a field of sprouting tarred corn on the Hungerford place was visited. In spite of the fact that a field of unprotected corn adjoined it, crows came to this field, perhaps because it was nearer woods. After three of them had walked about among the hills for fifteen minutes the place was inspected. Only three plants had been pulled up, but in each case the grain had been removed. It may be mentioned here that at Wayland, Mass., during June, 1901, crows pulled a large quantity of tarred corn, but did not eat it. The corn there had been coated with wood ashes after the tarring and dropped by a corn planter. Some farmers object to tarring for fear of clogging the planter. At Marshall Hall lime is used instead of ashes, but most farmers who tar their corn discard the machine and plant in hills.

The injury to corn by crows at other seasons than sprouting time is, as a general thing, comparatively insignificant, but in some years it has been important when the ears were in the milk. Unfortunately at the worst times no observations were made, though crows were seen each summer feeding on corn in this stage of development, tearing open the ears and picking out the kernels in rapid succession (Pl. XI, fig. 2). In the National Zoological Park at Washington during the summer of 1896, their depredations on an acre of corn in the milk were watched and 50 percent of the crop was found to have been ruined. The only scarecrows that proved effective at Marshall Hall were dead crows and strings stretched on poles around the field and hung with long white streamers. Although in fall the number of marauders is greatly increased by reenforcements from the North, ripe corn sustains less injury than roasting ears. One reason is the fact that the extracting of a few kernels from a ripe ear does not cause the rest to rot, as is the case with roasting ears. Another reason is the abundance of fall fruit. Wheat also suffers comparatively little. When it is ripening, cherries and sprouting corn divert the crows' attention. After it is cut and gathered into the shock, however, they often join the English sparrows in removing the kernels from the cap sheaves. In November, 1899, they attacked newly sown wheat also, cleaning every kernel off a patch of wet ground where the drill had failed to cover the seed. They were also observed in several instances pulling up sprouting wheat. Oats are injured even less than wheat, though crows have been noticed feeding on them at harvest time.

Crow Blackbird.—The crow blackbird (fig. 25) takes grain to the extent of 45 percent of its food, as Professor Beal has shown, and is a bird that needs watching. The farmers at Marshall Hall complained that it injured sprouting corn, but observations did not show the damage to be serious. The only birds concerned in this work were those in the breeding colony in the dell on the Hungerford farm. Except in rare instances, they were not seen visiting the Bryan farm at sprouting time; consequently they could not be held responsible for serious injury there. On May 18, 1899, they were watched in their dell. The parent birds kept going to and from their nests, which held eggs or newly hatched young, and many foraged in an adjacent field of sprouting corn. Nine old birds and four nestlings were collected, but only one, an adult, had taken corn, and that one in trifling proportion. On May 30, 1901, the colony was again visited. The young were then feathered and old enough to eat vegetable food. The most available supply was a field of sprouting corn unprotected by tar, that lay within a hundred yards of the dell. It was watched from 1 p. m. till 6 p. m., but although the birds often flew over it and in two cases alighted in it, they apparently did it no injury, and a careful search for pulled corn showed not a plant disturbed. Blackbirds probably did some mischief to corn in the milk, however, and were often seen stealing from the shock, but these offenses were trivial in comparison with their attacks on sprouting winter wheat. During November, 1900, a flock of from 2,000 to 3,000 pulled wheat on the Bryan farm, and only continual use of the shotgun saved the crop. At each report they would fly to the oak woods bordering lot 5, where they fed on acorns. Nine birds collected had eaten acorns and wheat in about equal proportions. The flock must have taken daily at least half an ounce of food apiece, and therefore, if the specimens examined were representative, must in a week have made away with 217 pounds of sprouting wheat, a loss that would entail at harvest time a shortage of at least ten times as much. When wheat and oats were harvested no appreciable loss was possible, as only a few blackbirds remained on the farm, and, in fact, these few appeared to be feeding on fruit or insects, or, when they did eat grain, to be taking chiefly waste kernels. During June of 1898, 1899, 1900, and 1901, when wheat was ripening or being harvested, blackbirds came from their nesting dell to the Bryan farm, but only in few instances were they seen in the wheat fields. On June 15 and 16, when oats and wheat were ready to cut on the Hungerford farm, the colony was closely watched. The young were on the wing and the

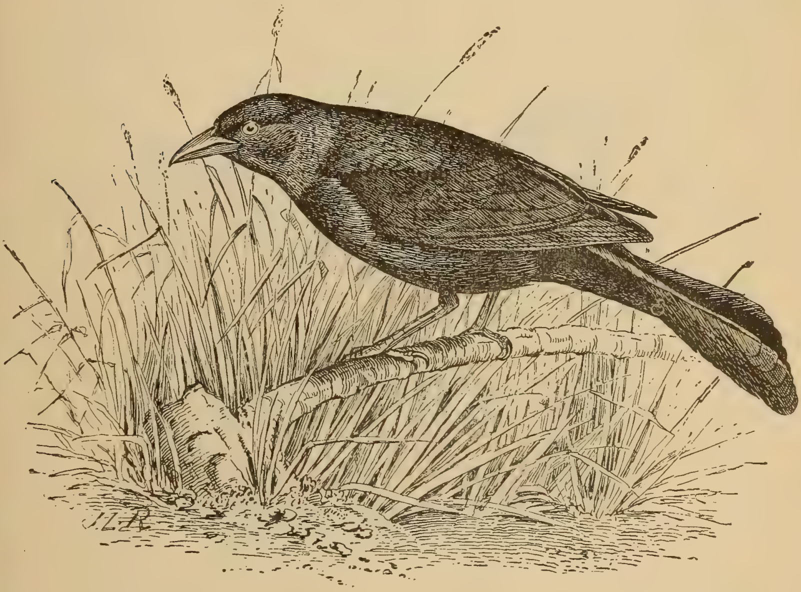


FIG. 25.—Crow blackbird.

whole flock was expected to resort to the grain fields, but none were seen to enter them. On June 18, however, when oats were being cut, several birds were noted feeding on them in two instances.

English Sparrow.—The English sparrow (fig. 26) is the most highly granivorous bird on the farm. The stomachs of 53 birds—17 nestlings and 36 adults—were collected. Grain had been eaten by 8 of the young—a large proportion, for nearly all nestlings are almost exclusively insectivorous. It formed 86 percent of the food of the adults, all but two having taken it. Six had selected oats, 14 wheat, and 15 corn. The number of English sparrows on the two farms varied from 200 to 1,000. They fed on grain whenever and wherever it was attainable. They did not appear to hurt sprouting fields, but did considerable harm to standing crops. In 1898 lot 4 was in wheat, and about the middle of June, when it was nearly ready for cutting, a strip 200 yards long beside the fence near the storage barn was found broken down by sparrows. The loss by this mischief was even greater than that by their continual thefts from the rest of the field. A year later they ruined in the same way a strip of wheat several yards wide, extending from the negro cabin to Persimmon Branch, and also sections of oat fields on the upper part of the Hungerford farm. They attacked both wheat and oats in the shock, and stole much of the grain in the cap sheaves. They were seen feeding on corn in the milk, but probably selected ears that had already been torn open by crows; Dr. A. K. Fisher, however, has observed English sparrows at Chevy Chase, Md., opening and eating the tip ends of ears of corn

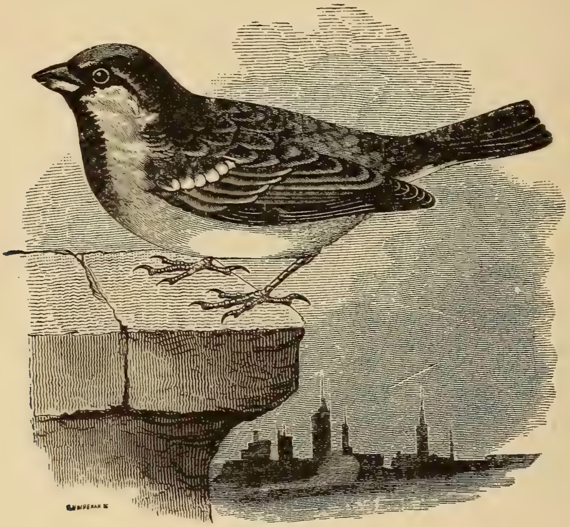


FIG. 26.—English sparrow.

without any aid from crows. Whenever stock was fed with grain they were always on hand to get their portion. They ate corn with the pigs in the hog lot, and often outnumbered the little chickens in the back yard around their rations of cracked corn or Indian mush. Not satisfied with regular feeding times, they drew on the source of supply, the corn house, and could be seen any day in the year, but most commonly in winter, flying out of it, sometimes by the score.

Other birds.—So far as is known, no other birds of the farm committed serious depredations on grain, though several occasionally did trifling harm. The red-winged blackbird did not disturb sprouting grain, but was seen in the first week of August, 1898, to visit cornfields in flocks of from 12 to 20 and eat from roasting ears. Goldfinches were troublesome in ripening oats on the Hungerford farm during the last week of June, 1899. A flock of a hundred spent most of the day swaying on bending oat stems. Four were collected, but singularly enough no grain was in their stomachs. On an acre of the field where the birds usually assembled, 5 percent of the crop was lost from the breaking down of stalks.

If the mourning dove and the bobwhite do harm to grain it is so slight as to escape notice. The dove, however, has been taken with a few kernels of sprouting wheat in its crop.[a] Both birds eat a good deal of waste grain in stubble-fields. On August 31, 1898, in lot 4, there was a flock of at least 30 doves in the wheat stubble of the Bryan farm, and at the same time there were two smaller flocks on the Hungerford place. In November, 1899, the flock on the upper part of the farm fed with the bobwhites on wheat stubble, and, like them, did not appear to relish corn dropped from the ear in fields where they were searching for weed seed. There was considerable diversity of feeding habits among different flocks of bobwhites on the two farms. One flock on the Bryan farm during November and December, 1900, was seldom seen on a patch of wheat stubble adjacent to their cover, the oak woods of lot 5. Hawks were numerous there, however, and may have frightened the birds away from what would ordinarily have been a tempting feeding ground. A large covey on the lower part of the Hungerford farm, where no wheat had been raised, fed entirely on weed seed, but one at the upper end spent about all the feeding time in wheat stubble. This covey had a habit of sleeping in a peach orchard, as was attested by little rings of dung showing where the birds had squatted in a circle with heads out and tails in. From six of these rings, representing as many days' feeding, 300 droppings were collected. Remains of wheat, or more strictly speaking, fragments of bran from one-fifth of a millimeter to 5 millimeters in length, formed 85 percent of them. A bird of this covey had in its crop 160 whole grains, and in its stomach other wheat half digested, all amounting to 91 percent of its food. The next year bobwhites were noted feeding in wheat stubble in lot 3 (Pl. XII, fig. 2). In November, 1900, observations were made in a cornfield in which the tops of the stalks had been removed for fodder, leaving the ears attached to low stalks. In many places kernels had dropped to the ground, but the bobwhites that frequented the field to procure weed seed apparently did not touch them. These desultory data would seem to indicate that the bobwhite takes only waste wheat and does not relish corn, but observations made in November, 1901, on lot 5 of the Bryan farm, when the corn was in the stack (Pl. XII, fig. 1), does not confirm this supposition; for in this case the birds fed to a certain extent on the waste kernels of corn scattered on the ground.

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[a] In Essex County, N. J., the dove does much damage in newly sown fields of buckwheat.

The meadowlark is much less granivorous than these two species, but it often picked up wheat in stubble-fields just after harvest and late in the fall. One specimen obtained November 29, 1900, contained 70 percent of wheat. The cardinal was occasionally seen feeding on waste wheat and corn along the edge of stubble-fields. The English sparrow, the crow, the crow blackbird, the red-wing, and the cowbird are also stubble feeders. On the 5th of August, 1898, fully a thousand crow blackbirds with a few redwings were noted picking up waste grain in the wheat and oat stubble of the Hungerford farm. If such a horde of these birds were present at harvest time, complaints would be made against them as serious as those now heard from the Mississippi Valley.

During the blizzard of February, 1900, several birds obtained food from the droppings of farm animals. English sparrows and crows were seen picking corn from dung in the hog pen on the Hungerford farm, and meadowlarks, horned larks, doves, and cardinals were noticed taking it from cow droppings in an open pasture.

The native sparrows, unlike the English sparrows, have little or no liking for grain. In a field of wheat on the Bryan farm 5 English sparrows and 19 native sparrows, including song, field, chipping, and grasshopper sparrows, were collected, just before and just after the crop was cut. All the English sparrows were gorged with wheat, but only 2 native sparrows—a chipping sparrow and a grasshopper sparrow—had eaten it, and they had taken only a single kernel apiece. Moreover, when winter wheat sprouted, the hosts of native sparrows from the North that were running over the fields could not be detected doing it any injury.

VI.—WEED SEED.

Weed seed is a staple article of diet for practically all seed-eating birds. It formed 18 percent of the food of the whole number of birds collected, and had been eaten by 162. Lists of these birds and of the 41 kinds of seeds that they selected are appended.

List of weed-seed eaters and weed seed eaten.

SPECIES OF BIRDS WHOSE STOMACHS CONTAINED WEED SEED.

Bobwhite.
Mourning dove.
Horned lark.
Bobolink.
Cowbird.
Red-winged blackbird.
Meadowlark.
Rusty blackbird.
Crow blackbird.
Goldfinch.
Savanna sparrow.
Grasshopper sparrow.
White-throated sparrow.
Tree sparrow.
Chipping sparrow.
Field sparrow.
Junco.
Song sparrow.
Cardinal.
Carolina chickadee.

SPECIES OF WEED SEED EATEN.

Bull thistle (*Carduus lanceolatus*).
Beggar-ticks (*Bidens frondosa*).
Sneezeweed (*Helenium autumnale*).
Ragweed (*Ambrosia artemisiæfolia*, fig. 27).
Giant ragweed (*Ambrosia trifida*).
Sow thistle (*Sonchus oleraceus*).
Dandelion (*Taraxacum taraxacum*, fig. 27).
Wild lettuce (*Lactuca spicata*).
Black bindweed (*Polygonum convolvulus*, fig. 27).
Pennsylvania persicaria (*Polygonum pennsylvanicum*).
Knotweed (*Polygonum aviculare*).
Climbing false buckwheat (*Polygonum scandens*).
Bitter dock (*Rumex obtusifolius*).
Curled dock (*Rumex crispus*).
Sheep sorrel (*Rumex acetosella*).
Crab-grass (*Panicum sanguinale*).
Pigeon-grass (*Chætochloa glauca*, fig 27).
Green foxtail grass (*Chætochloa viridis*).
Broom-sedge (*Andropogon virginicus*).
Sheathed rush-grass (*Sporobolus vaginæflorus*).
Poverty grass (*Aristida* sp.).
Yard grass (*Eleusine indica*).
Bermuda grass (*Capriola dactylon*).
Paspalum (*Paspalum* sp.).
Sedge (*Cyperus*).
Sassafras (*Sassafras sassafras*).
Blackberry (*Rubus villosus*).
Pokeberry (*Phytolacca decandra*).
Partridge pea (*Cassia chamæcrista*).
Sweet clover (*Melilotus alba*).
Tick-trefoil (*Meibomia nudiflora*).
Snowdrops (*Kneiffia fruticosa*).
Chickweed (*Alsine media*).
Amaranth (*Amaranthus retroflexus*, fig. 27).
Trumpet creeper (*Tecoma radicans*).
Yellow sorrel (*Oxalis stricta*).
Rib-grass (*Plantago lanceolata*).
Spurge (*Euphorbia maculata*, fig. 27).

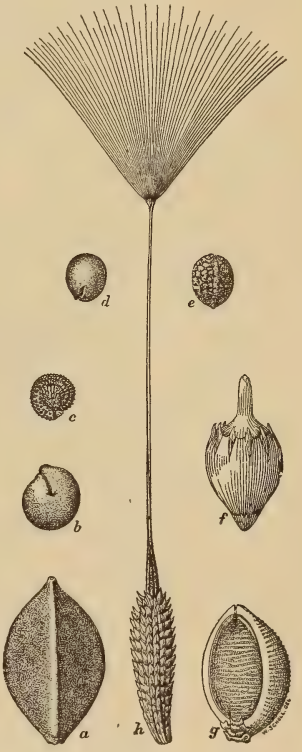


FIG. 27.—Weed seeds commonly eaten by birds: *a*, bindweed; *b*, lamb's-quarters; *c*, purslane; *d*, amaranth; *e*, spotted spurge; *f*, ragweed; *g*, pigeon-grass; *h*, dandelion.

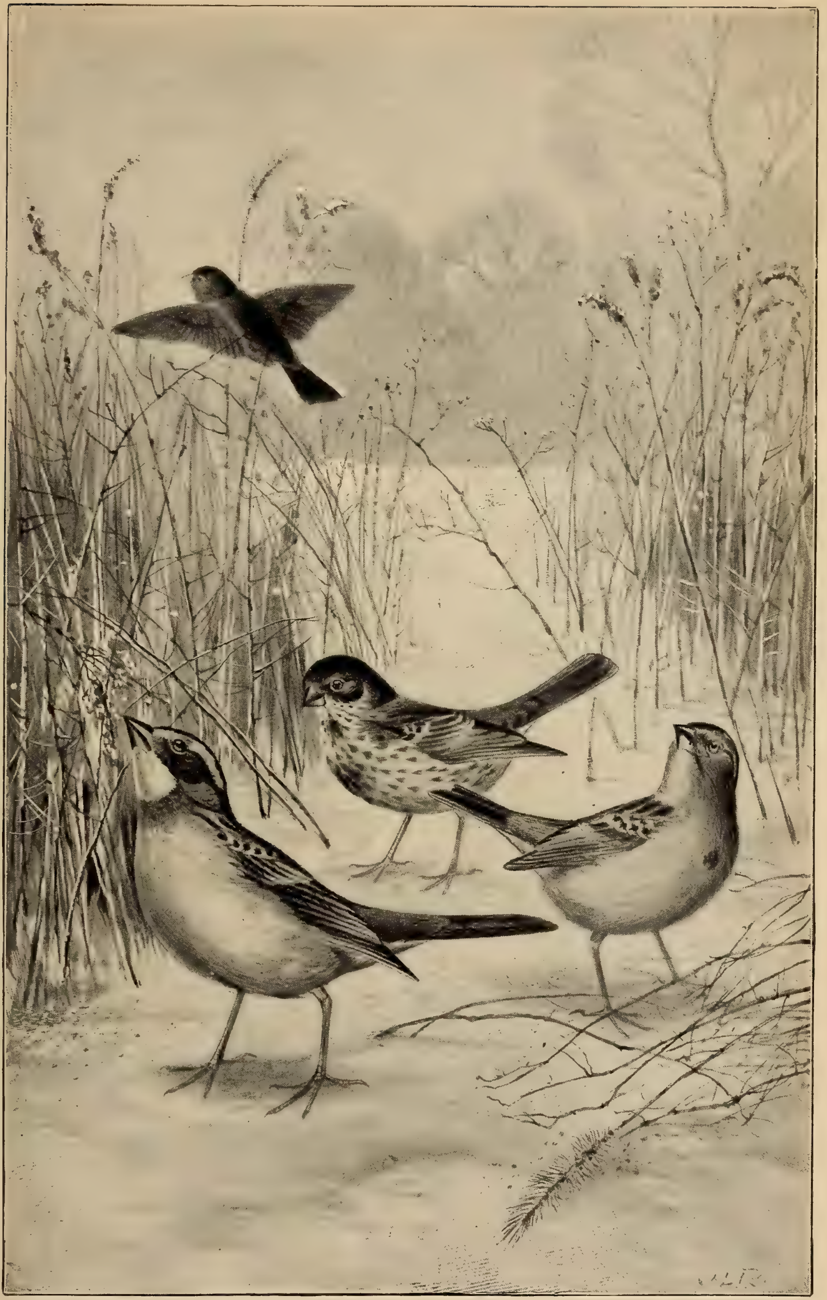
Lamb's-quarters (*Chenopodium album*, fig. 27).
Purslane (*Portulaca oleracea*, fig. 27).
Jewel-weed (*Impatiens*).

WEED DESTRUCTION BY NATIVE SPARROWS.

Spring.—The farmer's strongest allies in his campaign against weeds are the various species of native sparrows (Pl. XIII), which are a potent aid every month in the year, though chiefly in the colder months. The value of their work, obvious in fall and winter, is less easily appraised in spring and early summer, but may be suggested by a few notes.

The sparrows that breed on the farm have to content themselves early in the spring with seeds left from the preceding year, but by the middle of May they find in fields that have lain fallow all winter, or that were in corn the previous season, a plentiful supply of the ripening seeds of chickweed and, a little later, of yellow sorrel. Song sparrows were seen (May 18, 1899) on the edges of such fields helping themselves liberally from opening chickweed pods. Chipping sparrows were noted (May 30, 1896) far out in a patch of corn stubble feeding on yellow sorrel that was going to seed, and a chipping sparrow and a field sparrow collected June 16 and 17, 1898, had eaten seeds of the same weed.

Summer.—During the second week in July, 1898, a song sparrow was often seen following lines of knotweed in the road along the bluff, and a telescope showed that it was plucking off the newly ripened seeds. At the same time another song sparrow, killed on the edge of a timothy field, and two grasshopper sparrows from the center of the same field, had eaten seeds of rib-grass, which at the time was a bad weed in the timothy. During August the seed-eating of sparrows is sufficiently noticeable to attract the attention of even a casual observer, for by this time great stores of weed seed have ripened and the young sparrows, which have been exclusively insectivorous, are ready to take vegetable food. The following notes merely give a few specific cases that might have been multiplied many times every day. A song sparrow was observed (August 28, 1898) picking out soft immature seeds from a spike of green fox-tail grass, a plant that, with its congener pigeon-grass, furnishes seed-eating birds with favorite food. On the same date a score of chipping sparrows were noted amid crab-grass, which was spreading so rapidly through a market garden in a pear orchard on the Bryan place that it was likely to impair the product. They hopped up to the fruiting stalks, which were then in the milk, and beginning at the tip of one of the several spikes that radiated from a common center like the spokes of a wheel and, gradually moving their beaks along to the base, they chewed off the seeds of spike after spike in regular succession. Usually they did not remove their beaks until they reached the base, though some individuals, especially birds of the year, would munch a few seeds in the middle of a spike and then take a fresh one. Fourteen birds were col-



FOUR COMMON SEED-DESTROYING SPARROWS.

1, Junco; 2, white-throated sparrow; 3, fox sparrow; 4, tree sparrow.

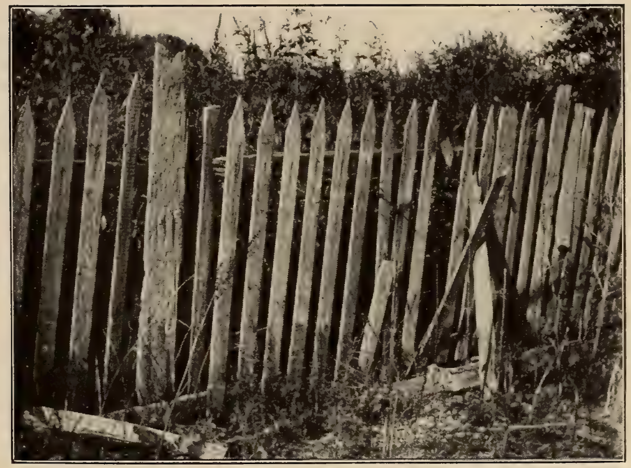


FIG. 1.—GIANT RAGWEED IN GARDEN.

FIG. 2.—BROOM-SEDGE APPROPRIATING LAND.

lected from this orchard and 10 from other parts of the farm. Crab-grass seeds were found to have formed 54 percent of their food, one stomach containing 150 seeds. Most of the remaining 46 percent consisted of such weeds as green fox-tail grass, yellow sorrel, spotted spurge, and purslane, with a very small quantity of ragweed. Other sparrows were found feeding on crab-grass and the foregoing weeds during the last week of August and the first part of September, 1898. It is important to remember at this point that each of the sparrows that live on the farm in summer, namely, the song, chipping, field, and grasshopper sparrows, has its own peculiar habitat, and to note that the consequent diversity of feeding ranges makes their work more or less complementary, hence more valuable.

Autumn to late spring.—From autumn to late spring evidence of the seed-eating habits of sparrows is so plain that he who runs may read. The influx of northern migrants has by this time increased the sparrow population several-fold, and as the leaves have fallen and the crops have been cut, the lively flocks diving here and there among the brown weeds to feed are familiar adjuncts of every roadside, fence row, and field. Sparrows were collected only during November, 1899, February, 1900, and April, 1899. In all, 76 were taken, which comprised 25 song sparrows, 23 white-throats, 12 field sparrows, 11 juncos, 3 chipping sparrows, a grasshopper sparrow, and a savanna sparrow. Seventy percent of their food was weed seed, and the proportion would have been much larger if the birds collected in April could have been taken in March, for they had eaten of the abundant April insects almost to the exclusion of seeds.

Field observations.—The mere examination of stomachs does not give an adequate notion of the extent and the methods of weed-seed eating. It was not feasible to collect stomachs enough to show the characteristics of all the birds of the farm. A few minutes' field observation, however, would often tell what a large flock was doing in cases where it would have been impossible to collect more than a few individuals. Several notes are cited below to illustrate the sparrow's work, which begins, as has already been said, before the seeds are ripe, and continues throughout fall and winter and even far into spring.

In a rank weedy growth of crab-grass and green fox-tail grass in the truck plot of lot 3 a flock of 20 juncos was watched for half an hour, November 15, 1899, as they breakfasted on seeds. At this time most of the seeds had fallen and the birds picked them up under the plants instead of taking them from the stalks as the chipping sparrows had done in August. On the following day the same flock, with about an equal number of white-throated sparrows and song sparrows, flew to the wheat stubble of lot 3, beside the negro cabin, and busily gathered fallen seeds of ragweed which had made a rank growth there.

This weed is troublesome at Marshall Hall; it chokes the crops on truck lands, gains a foothold in pastures, making milk bitter and unsalable, and is so pestiferous in hayfields that it has to be removed by a gleaner. Fortunately, however, it is palatable to seed-eating birds, and it probably furnishes them a larger proportion of their food than any other plant on the farm, a fact which doubtless prevents much greater trouble and loss. Another harmful weed is broom-sedge. It is ruinous to mowing and pasture, and spreads so readily that if undisturbed it would in time take possession of all the fields (Pl. XIV, fig. 2). Juncos, field sparrows, tree sparrows, and probably other species check it to some extent. As has been said before, field sparrows and tree sparrows are usually to be found associated with it. In the higher part of the hog lot a flock of field sparrows (fig. 28) during the middle of November, 1899 and 1900, spent most of their time swaying on broom-sedge stalks, from which they were busily extracting seeds. Sometimes a bird alighting on a plant would bend it to the ground and hold it down with its feet while picking out the seeds; seldom would one feed from the ground in any other manner. At the same time a flock of about 30 field and tree sparrows along Persimmon Branch behind the truck plot of lot 3 were also feeding on broom-sedge.

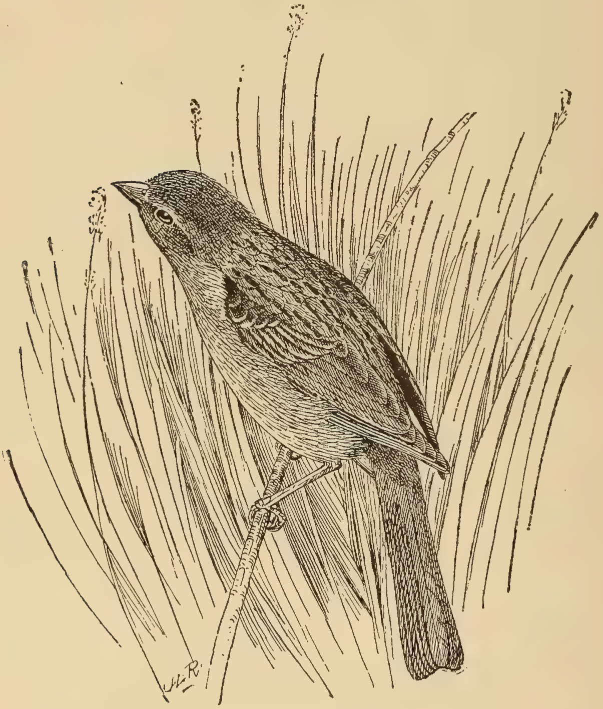


Fig. 28—Field sparrow.

An interesting illustration of tree sparrows' habits was noticed on the Hungerford farm during a heavy snowstorm in the third week of February, 1900. Here and there, where the whiteness of the field was pierced by phalanxes of dry broom-sedge, a flock of a dozen or more tree sparrows found good cheer in spite of the driving flakes. From one brown patch to another they flew, clinging to the plants while they plucked out the seeds, seldom leaving a stalk unexplored. Frequently two would feed from a single stalk, while a third, made thrifty by the wintry dearth, hopped in the snow below searching for scattered seeds. The snow whirled in clouds across the field, but these little creatures, inured to northern tempests, worked on with cheerful, hardy industry. Several days later a flock of more than 200 sparrows, chiefly juncos and tree sparrows, with some song sparrows and white-throats, were observed feeding on a piece of truck land between two bushy brooks where weeds grew rank, in places overtopping a man's head. The snow beneath was everywhere delicately marked with interlacing tracks, which showed how thorough had been the search for food. One space 50 yards square had hardly a square yard that was free from the prints of tiny feet. The main harvest of ragweed seeds lay buried under the snow, but remnants still clung to the stalks, and lamb's-quarters and amaranth were well laden. Under all these plants thickly scattered chaff and seed coats bore witness to the birds' work.

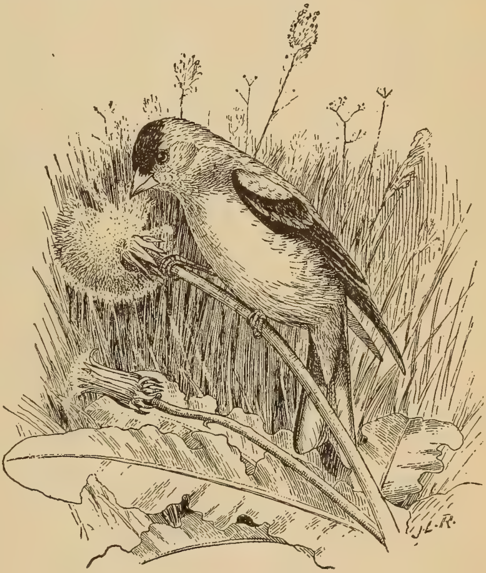


FIG. 29.—Goldfinch.

WEED DESTRUCTION BY OTHER BIRDS.

Goldfinch.—Goldfinches (fig. 29) would be as valuable as sparrows if they were as numerous. Like sparrows, they destroy weeds throughout the year. In spring their first fresh supply comes from the dandelion. On May 18, 1899, three males and two females hopped about among the dandelion globes in the Bryan front yard, every now and then perching crosswise on the stalks and devouring the seeds. In June goldfinches often visited the field daisy (*Erigeron ramosus*), and in July the purple aster (*Vernonia*) and the wild carrot (*Daucus carota*). In these cases they appeared to be picking out immature seeds, and one bird that was shot contained a soft mass of such food. The habit of feeding on thistles, which has given the species its common name of 'thistle bird,' was well exemplified one day in August, 1898. A thistle on which a goldfinch had been feeding was examined and on its leaves and the ground beneath 67 seeds were counted. They appeared perfect, but close inspection showed a slit through which the meaty kernel had been deftly removed. On the 30th and 31st of August, 1898, the goldfinch was seen eating seeds of the sow thistle and of wild lettuce. September 7, 1896, six birds were banqueting on seeds of beggar-ticks which had appropriated several square rods in an outfield and threatened to give trouble in subsequent seasons. Four youngsters, so recently fledged that they allowed me to approach within 10 feet of them, gave an excellent opportunity (September 21, 1896) to observe how goldfinches feed on ragweed. Often they would all alight on the same plant at once, then they would wrench off the seeds, crack them, extract the meat, and drop the shell, their actions resembling those of a canary at its seed cup. In one instance three alighted on a very small plant, which under their weight bent to the ground. Nothing daunted, they clung to the sprays, heads downward, until they touched the earth, then, shifting their position so as to hold the stems under their feet, went on with their meal.

About the middle of November, 1900, a flock of 300 goldfinches were noted perching in luxuriant ragweed on truck land of the Hungerford farm, industriously stripping off seeds. The work of such an army must have caused decided limitation of the next year's growth. During the third week of February, 1900, a flock of about 50 were seen in a tangle of trumpet creeper on the edge of the bluff (Pl. VI, fig. 1). They were clinging to the long, partly opened pods, extracting seeds, and the refuse of their meal made a continual flurry of floating empty seed wings. During four minutes six birds that were somewhat isolated dropped 57 of these seed wings. Feeding on the trumpet creeper proved to be habitual with the goldfinch and must have prevented many seeds from spreading inland over lot 3 before the prevailing river winds. The plant is a mischievous weed at Marshall Hall. In 1898 it choked out the oats in one part of a patch and twined around nearly half the cornstalks in a field near the river. It was bad in truck plots during 1899 and 1900, and always makes the breaking up of old pastures a serious undertaking for man and horse. It may be mentioned in passing that the downy woodpecker has also been seen picking out these winged seeds, as well as taking mullein and ragweed seeds from the stalk.

Purple Finch.—The purple finch, though it habitually feeds in trees, often destroys seeds of noxious plants. On the 15th and 16th of November, 1900, a thicket of giant ragweed that had made a 10-foot growth in the Bryan kitchen garden (Pl. XIV, fig. 1) was gay with a flock of 30 finches that hung on the sprays while they stripped off the seeds as the goldfinches had. One bird that was watched with a glass ate 15 seeds in three minutes.

Chickadee.—The Carolina chickadee, though largely insectivorous, was also frequently seen hanging head downwards in ragweed plants wrenching off seeds.

Cardinal.—The cardinal, when observed on arable land, was a denizen of hedgerows. It was not abundant like finches and sparrows, but was not uncommon in loose flocks of ten or a dozen. In company with sparrows it often foraged a little way out from cover for the larger weed seeds, and was seen picking up seeds of both small and giant ragweed. It has a peculiar habit, shared by the fox sparrow, and seen sometimes in the song sparrow and the white-throat, of cracking and eating the seeds of berries and other fleshy fruits; a habit probably useful, especially when seeds of the blackberry and other fruiting plants that invade cultivated land are selected.

Blackbirds.—The large flocks of crow blackbirds on the farm, often numbering from 2,000 to 3,000, have been previously referred to. If they were not notorious grain thieves they would be famous weed destroyers. Even as it is they were sometimes seen eating weed seeds, and in spring, when grain is lacking, they probably do considerable good. During fall and spring of the years 1899, 1900, and 1901, flocks of from 50 to 100 cowbirds, and often several hundred red-winged blackbirds, and occasionally as many as a thousand rusty blackbirds, assembled on the farm. They fed on ragweed of wheat stubble and among weeds of truck areas, and doubtless destroyed an incalculable number of seeds. The cowbird and the red-winged blackbird, according to Professor Beal, feed on weed seed to the extent of more than half their annual food and during most of the colder half of the year at least four-fifths.

Meadowlark.—The meadowlark, though it gets two-thirds of its living from insects, has in the colder months a voracious appetite for seeds. On the Hungerford farm in November, 1899 and 1900, were two flocks of meadowlarks, and on the Bryan farm a single flock somewhat scattered, numbering altogether about 50 individuals. They usually divided their time among the weeds of cornfields both old and new, the ragweed of wheat stubble, and the miscellaneous weeds of truck land. On one occasion birds were seen eating seeds of pigeon-grass in the last situation, and on another picking up seeds of ragweed.

Mourning Dove.—After the breeding season there were three flocks of doves and three of bobwhites distributed like the meadowlarks. Each flock of doves contained between 20 and 30 individuals. One, on the Bryan place, fed in weedy old cornfields, and, after the wheat had been harvested, amid the ragweed of wheat stubble, which by August was 18 inches high. A bird killed from this flock had eaten, in addition to other food, seeds of yellow sorrel, spotted spurge, crab-grass, and pigeon-grass. Another, on the upper part of the Hungerford place, foraged in the ragweed of wheat and oat stubble, and in a heavy crop of crab-grass and pigeon-grass in a cornfield that was being harvested. The stomach of one of these birds, taken November 17, 1899, contained 150 ragweed seeds, and another 300 crab-grass seeds. The third, on the lower part of this farm, were not seen in stubble-fields, but frequented forests of weeds in certain orchards and truck plots, and apparently made their whole fare on the seeds. During the heavy snow of February, 1900, doves fed in a wind-swept pasture, sometimes appearing to pick up weed seeds, and sometimes assembling in two pits 10 feet in diameter and 6 feet deep, where abundantly fruited plants of pokeberry were growing. At five different times the flock, numbering more than 20, was flushed from the pits. Footprints and red stains on the snow showed that they were eating berries and probably their seeds, some of which were found on the ground after the snow had melted. Fruit-eating birds, which take the berries of this plant, void the seeds uninjured and thus disseminate them, but doves grind them to atoms by the powerful action of their gizzards.

Bobwhite.—One covey of the bobwhites, which has already been described as feeding largely on wheat in its season, lived on the upper part of the Hungerford place; another, still larger, which to judge from its droppings took practically no grain, lived on the lower part; and a third lived on the Bryan farm. One bird from the first covey, 7 from the second, and 5 from the third were shot and examined. These 13 had taken weed seed to the extent of 63 percent of their food. Thirty-eight percent was ragweed, 2 percent tick-trefoil, partridge pea, and locust seeds, and 23 percent seeds of miscellaneous weeds, such as pigweed, sheep sorrel, Pennsylvania persicaria, climbing false buckwheat, trumpet creeper, paspalum, jewel-weed, and pigeon-grass. Though the stomachs and crops were not well filled, the birds had eaten 5,582 weed seeds. One crop contained 400 pigweed seeds, another 500 seeds of ragweed. The latter seeds, which are cracked open by most birds, are swallowed whole by bobwhites and doves, in spite of the spiny processes which beset them. One bobwhite, in addition to other food, had consumed 550 seeds of sheep sorrel; another 640 seeds of pigeon-grass; and several 50 to 100 seeds of jewel-weed.

Extent of weed-seed destruction.—Inspection of an acre of truck land between two converging bushy brooks on the Hungerford farm (November 16, 1899), gave a very satisfactory idea of the autumn work of weed-destroying birds. Crab-grass and pigeon-grass formed a low undergrowth, while lamb's-quarters, pigweed, and giant ragweed from 6 to 10 feet high rose in a thick weed forest. A flock of 15 quail foraged in the center of the area, 25 doves were scattered over the upper end, and fully 200 native sparrows scurried about at the lower end, while a band of 300 goldfinches clung to the ragweed stalks plucking off seeds. If we make the fair assumption that the birds remained on this acre of plenty long enough to obtain a full meal, we can reckon approximately the destruction wrought. At a moderate estimate 20 seeds apiece may be allowed for the goldfinches, 100 for the sparrows, providing that they were from crab-grass or pigeon-grass, and 500 for the doves and bobwhites, or a total of 46,000 seeds destroyed at a single breakfast.

In the last week of April an attempt was made to ascertain what proportion of the weed seeds ripening on the farm had been consumed during the previous half year. In the wheat field of lot 4, where at the beginning of October there had been scores of seeds on every ragweed plant, it was difficult to find in a fifteen-minute search half a dozen remaining. In the truck plot of lot 3, which had borne a thick growth of pigeon-grass, examination of an area where there had been hundreds of seeds the autumn before would sometimes fail to disclose one, and in a mat of crab-grass in the same field frequently not one was left out of a thousand present in October.

VII.—SPECIES.

Having discussed under the heads of insects, flesh, fruit, grain, and weed seed the elements that entered into the food of the birds at Marshall Hall, we may now enumerate the birds themselves and indicate as far as possible the economic status of each with reference to this particular farm.[a]

WATER BIRDS.

The data concerning water birds are so limited as almost to preclude anything more than a list of species.

GREBES.

The horned grebe (*Colymbus auritus*) has been noted on the river at Marshall Hall in December on two occasions. A pied-billed grebe (*Podilymbus podiceps*) was diving in the bay where the shore curves up to the calamus swamp December 12, 1900 (Pl. III, fig. 1). During November and December as many as a dozen grebes may often be seen on the Mount Vernon flats, on the Virginia side of the river. Grebes feed much less on fish than is popularly understood, and probably do little harm to fisheries. The large proportion of vegetable matter in their food renders them excellent eating, the flesh resembling that of the adult pigeon in taste. They are difficult to secure, however, as their diving habit protects them from all but the most persistent gunners.

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[a] Whenever lists of species of birds are given the figure placed after a name indicates the number of stomachs of that species which were examined.

LOONS.

The common loon (*Gavia imber*) and the red-throated loon (*Gavia lumme*) have been noted at Marshall Hall by Mr. William Palmer.

MURRES.

The Brünnich murre (*Uria lomvia*) has been noted at Marshall Hall by Mr. William Palmer.

GULLS AND TERNS.

The herring gull (*Larus argentatus*) and the ring-billed gull (*Larus delawarensis*) occur on the river in the colder half of the year. During March and the first half of April it is not uncommon to see from a dozen to twenty gulls floating between the farm and Mount Vernon (Pl. XVII, fig. 2), apparently busy fishing. The common tern (*Sterna hirundo*) and the black tern (*Hydrochelidon nigra surinamensis*) have also been noted at Marshall Hall.

DUCKS, GEESE, AND OTHER WATER FOWL.

The following species of water fowl were noted on the river at Marshall Hall:

Red-breasted merganser (*Merganser serrator*).
Hooded merganser (*Lophodytes cucullatus*), 2.
Mallard (*Anas boschas*).
Black duck (*Anas obscura*).
Baldpate (*Mareca americana*), 1.
Green-winged teal (*Nettion carolinensis*).
Blue-winged teal (*Querquedula discors*).
Shoveller (*Spatula clypeata*).
Pintail (*Dafila acuta*).
Wood duck (*Aix sponsa*).
Redhead (*Aythya americana*).
Canvasback (*Aythya vallisneria*), 1.
Scaup duck (*Aythya marila*).
Lesser scaup duck (*Aythya affinis*), 1.
Golden-eye (*Clangula clangula americana*).
Buffle-head (*Charitonetta albeola*).
Old-squaw (*Harelda hyemalis*). Noted by Mr. William Palmer.
Canada goose (*Branta canadensis*).
Whistling swan (*Olor columbianus*), 1.

Ducks were so abundant here before the civil war that they were regularly counted on for the larder. As late as 1864 and 1865 it was not uncommon in November to find a flock of 150 scaup ducks in the little bay by the calamus swamp, and in the same place ten years earlier as many as 15 canvasbacks were killed at a shot. It is now rare for half a dozen ducks of the commonest species to settle in the bay. Across the river on the Mount Vernon flats (Pl. XVII, fig. 2), where there is an abundance of wild celery (*Vallisneria spiralis*), flocks of from 25 to 200 ducks are occasionally seen, but they are so continuously fusiladed from launches that run down from Washington and Alexandria that they are soon killed or driven away. Much worse slaughter is wrought by the 'big' gun at night or in the early dawn. These 'big' guns are in reality cannon mounted in gunning skiffs.

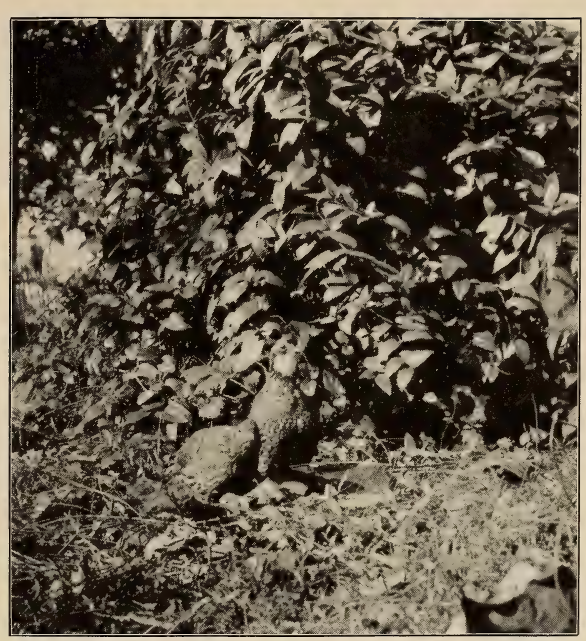

FIG. 1.—BOBWHITE.

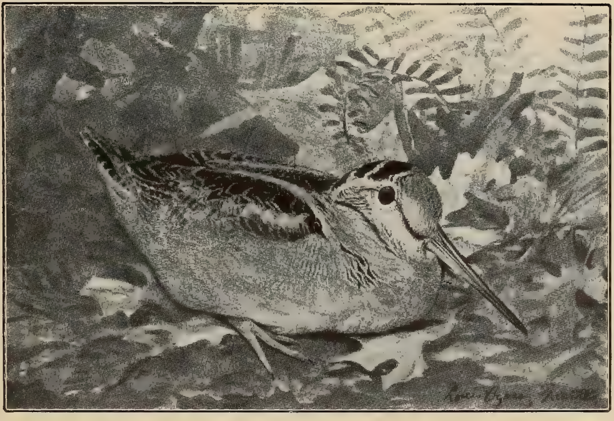

FIG. 2.—WOODCOCK.

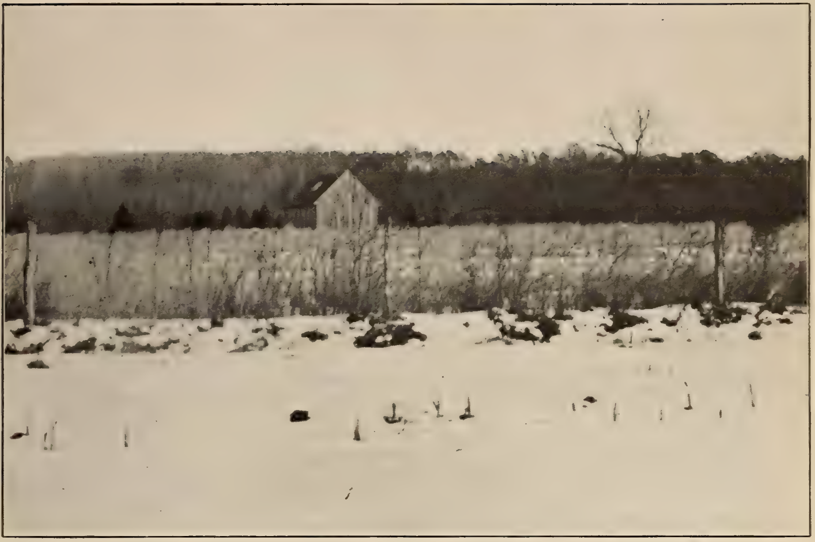

FIG. 1.—BROOM-SEDGE OF LOT 2, FREQUENTED AT NIGHT BY BOBWHITES.

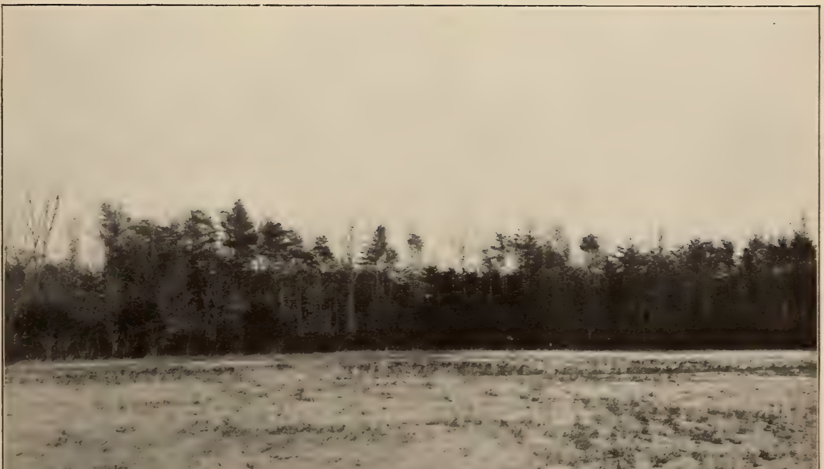

FIG. 2.—PARTRIDGE PEA OVERSPREADING PASTURE OF LOT 4, EATEN EXTENSIVELY BY BOBWHITES.

The pines in the background were defoliated by the pine saw-fly in the spring of 1900.

They are loaded with a pound of shot that kills at 200 yards or more. The use of the big gun is unlawful, but duck pot hunters have often eluded the authorities by throwing the gun overboard, having previously attached a string and a large cork, so as to insure subsequent recovery. Shooting from launches, which is also frequent and very destructive in this vicinity, is against the law in many places, and should be generally prohibited.

The stomach of a baldpate that was taken March 22, 1902, contained only sprouting wild rice and the stems of some aquatic plants. Two hooded mergansers collected November 15, 1900, had fed exclusively on small fish. A lesser scaup duck taken on the same day had eaten the claw of a blue crab and 75 snails (mostly *Amnicola altilès*, with a few *Goniabosis virginicus* and *Planorbis albus*). The stomach of a canvasback killed the day previous contained 100 seeds of bulrush (*Scirpus*). A whistling swan killed November 16 had in its stomach one bulrush seed and a mass of wild celery leaves about as large as the ball of a man's thumb. The latter plant is abundant in shallow water about Marshall Hall, and gives the characteristic flavor to canvasbacks and other water fowl that feed on it.

HERONS.

The following herons were noted:

Least bittern (*Ardetta exilis*).
Great blue heron (*Ardea herodias*).
Little blue heron (*Ardea cærulea*).
Green heron (*Ardea virescens*), 2.
Black-crowned night heron (*Nycticorax nycticorax nævius*), 1.

The last three species eat fish extensively, but also take other food. One of two green herons that were collected contained, besides fish, a large spider, a giant water bug (Belostomatidæ), and 20 dragon-flies (Agrionidæ).

RAIL.

The toothsome little sora rail (*Porzana carolina*) is found during August and September amid the wild rice of the calamus swamp. The stomach of one, when examined, contained 200 wild rice seeds.

COOT.

The coot (*Fulica americana*) eats mainly wild celery, pond weed (*Potamogeton*), and other vegetable food, and is not to any marked degree piscivorous, as has been shown by the examination of stomachs. It is frequently caught at Marshall Hall in fishermen's nets. A coot was shot on November 2, 1901. It had been feeding on wild celery tubers or stolons, and in consequence had a most delicious flavor. It was perhaps not quite equal to the canvas-back, but was certainly not inferior to the redhead. The coot should in time take the place on the table of ducks and other waterfowl that are fast becoming exterminated. Coots may be bought in Washington at the rate of three for 25 cents, while canvas-backs in good condition can not be had for less than $3 a pair.

Dr. B. W. Evermann, who has recently made a careful study of the coot, says:

> I have been very much interested in the coot as an article of food. The opinion of those who have put themselves on record in the books is almost unanimous that the coot is worthless as food. And inquiry among my ornithological friends here in Washington resulted in my finding only two or three who had ever tasted coot. The majority of them seemed to regard eating coot very much as we regard eating crow—a thing not to be thought of!
>
> But my friends Dr. Fisher and Mr. William Palmer admit that they have eaten coot and like it. They even say they regard coot as not at all inferior to the famous canvas-back duck, and in this I agree with them fully. Coot, particularly young ones, skinned and fried, or even old ones parboiled, then baked, are quite as delicious as any duck I ever ate.
>
> It is, however, doubtless true that the delicacy of flavor, not only of the coot, but also of the canvas-back and all other ducks, is largely determined by the kinds of food they get. The wild celery (*Vallisneria spiralis*) is sufficiently abundant in Lake Maxinkuckee to give to the coot frequenting that lake a delicate flavor which has received high praise from all who are familiar with it.[a]

SHORE BIRDS.

Woodcock (*Philohela minor*, Pl. XV, fig. 2) are not uncommon at Marshall Hall. On both the Marshall Hall and Hungerford farms there are wooded dells of less than an acre in extent containing small, sluggish, marshy streams communicating with the Potomac. In these places during July woodcock are always to be found. They do not feed much in the dells, but at dusk forage out in the neighboring cornfields, and so destroy harmful insects. Thus, one bird, shot June 26, 1899, in this spot, had eaten wireworms and cutworms in addition to earthworms, fly larvæ, and May-flies. At the junction of two bushy brooks on the lower part of the Hungerford place, woodcock occur in the fall, and one collected November 15, 1900, had in its stomach two beetle larvæ, one grape seed, and two seeds of bastard pennyroyal.

Just below the Hungerford farm is a wooded swamp of a dozen acres where woodcock are also to be found. It is impossible to penetrate into this swamp more than a few rods without sinking to the knees in a black ooze composed of decayed vegetation. Woodcock are not found in this soft morass, but are confined to the edges and along a tiny alder-fringed stream which issues from a spring at the head of the swamp. A favorite feeding ground, located where this stream enters the forested body of the swamp amid elders, magnolias, ashes, willows, and maples, was inspected in July, 1902, and in an area a rod wide by several long the ground was found to be splashed with the chalk-like droppings of the birds, and in spots a foot or more in diameter had been probed to such an extent by their long bills that it reminded one of a colander. The holes thus made were from 1 to 2 inches in depth. An examination of the earth showed that there was a compacted layer of black decaying leaves from one-fourth of an inch to 1 inch in depth. Below the layer of leaves, some of which were not so rotted but that they retained their integrity, was found moist, yellowish-gray sand. Twenty examinations of the ground were made, each within a few inches of a spot marked by the borings, in order to secure specimens of invertebrates on which the woodcock subsists. The ground was dug up to the depth of several inches, and in the region where the leaves and sand met, large numbers of earthworms, spiders, snails, hydrophilid beetles, ground-beetles and their larvæ, and the larvæ of tipulid flies were unearthed. All of these have been taken from the stomachs of woodcock collected elsewhere. A search was made out in the middle of the swamp, where the black humus is from 6 inches to 3 feet in depth, but no food of any consequence could be found, which may account for the absence of woodcock in the middle of the swamp.

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[a] Osprey, Vol. I (new series), No. 4, p. 64, April, 1902.

On the creeks below Marshall Hall woodcock are abundant, and during the fall of 1901 were slaughtered in enormous numbers. Laws limiting the bag per day and prohibiting summer shooting are greatly needed in this county.

A Wilson snipe (*Gallinago delicata*) was flushed from the swamp on the upper part of the Hungerford farm April 14, 1899.

Two yellowlegs (*Totanus flavipes*) were noted on October 5, 1901, flying along the shore near the calamus swamp.

Solitary sandpipers (*Helodromas solitarius*) and spotted sandpipers (*Actitis macularia*) were observed most often in May. One of the latter birds, which was killed May 16, 1900, had eaten one large black ant, two ground-beetle larvæ, and a dozen May-flies.

Two killdeers (*Ægialitis vocifera*) were seen on the farm April 11, 1899, and one July 24, 1902.

The turnstone (*Arenaria morinella*) has been noted by Mr. O. N. Bryan.

GALLINACEOUS BIRDS.

On the Bryan farm a covey of bobwhites (*Colinus virginianus*, Pl. XV, fig. 1) was found during the fall and winter of 1901 along Persimmon and Partridge branches. They fed in the wheat stubble on the west side of lot 3 (Pl. XII, fig. 2) and slept in the thick broom-sedge of the west side of lot 2 (Pl. XVI, fig. 1). Another covey, which usually inhabited lot 5, could occasionally be seen feeding on the luxuriant growth of partridge pea in lot 4 (Pl. XVI, fig. 2). More of these birds than usual escaped from gunners, and the following spring (1902) bred about the farm. One pair was located on the edge of the calamus swamp, one on the river bluff near the cabin, one in the middle of lot 4, two on the edge of the woods of lot 5, two along the western boundary fence of the farm, and several along Persimmon and Partridge branches. They were still incubating during the last week of June. The cocks, mounted on fence posts or the lower branches of trees, were whistling their 'Bob White' incessantly. When a cock approached its mate while it was on its nest, it uttered the soft rally note so familiar to the sportsman in the fall. This was followed by a caterwauling much more unbirdlike than that of the yellow-breasted chat. One of its noises resembled that made by a cat calling a kitten. Another suggested the scolding of a caged gray squirrel. Others sounded like a combination of the alarm notes of a hen grouse with chicks and the strident cries of a guinea hen. It also uttered a loud, rasping noise such as might have been emitted by a whip-poor-will with a cracked voice.

In their feeding these birds picked dewberries, gathered scattered grain in wheat stubble, and caught grasshoppers, ground-beetles (*Harpalus pennsylvanicus*), and potato beetles.

The nest of the pair located in lot 4 was discovered on July 10 in the center of the lot amid some thick timothy. It contained eggs which were subsequently destroyed by crows. Young bobwhites are usually hatched before this time at Marshall Hall, according to the reports of farmers, generally during the last week of June; but although a thorough search for young was made up to the 12th of July none were found. Observations were suspended until the 24th, when three broods were found; the first but a day or two out of the shell, the others several days older, but still unable to fly. The older broods were pointed by a dog, and the mother birds flew up and fell flopping a few yards distant, feigning broken wings, while their striped chicks peeped squeakingly and ran with surprising swiftness for cover. In order to ascertain the food habits of these young without killing them, I collected some of their droppings and subsequently examined them. The remains of the food thus found proved to be entirely animal matter, and consisted of ants, true bugs, grasshoppers, ground-beetles, weevils, leaf-eating beetles, other beetles, spiders, and thousand-legs.

Thirteen bobwhites were shot in the middle of November, 1899, 1900, and 1901. Vegetable matter formed 78 percent of their food, and of this all but 8 percent, composed of white-oak acorns, wild fruit, and fruit seeds, was weed seeds. Animal matter amounted to 19 percent, and consisted of 1 spider, 1 true bug (*Alydus eurinus*), 1 parasitic wasp (*Tiphia inornata*), 1 sphinx caterpillar (*Deilephila galii*), 1 cutworm, 1 small ground-beetle, and a larva of another species, 1

12-spotted cucumber-beetle (*Diabrotica 12-punctata*), 1 potato-beetle (*Doryphora 10-lineata*), 7 leaf-hoppers (*Proconia*), and 14 grasshoppers (2 *Xiphidium* and 12 *Melanoplus*).

The freedom with which the bobwhite, regardless of cover, roams about large fields—pastures, meadows, or wheat, tobacco, corn, or truck lands—is very striking. The rapidity with which it moves from point to point, whether by flying or running, makes it less dependent on cover than most of the birds of the farm, and causes it to feed over far more territory than they. As an enemy of insect pests and a destroyer of weed seed it has few equals on the farm. It is the custom at Marshall Hall to shoot these birds for market, where they bring 15 cents apiece, a price that scarcely compensates for the loss of their services.

The ruffed grouse (*Bonasa umbellus*), though rather rare, was found breeding here, and in one instance a bird of the species was seen flying over the Bryan house.

The wild turkey (*Meleagris gallopavo fera*) occurs as a straggler at intervals of several years. A fine gobbler was seen at 4.30 a. m. May 16, 1900, in lot 4, but it quickly disappeared amid the wheat. The next morning it was seen in lot 2; but on discovery it rose and flew to the woods behind the calamus swamp.

PIGEONS AND DOVES.

A specimen of the passenger pigeon (*Ectopistes migratorius*) collected at Marshall Hall by Mr. O. N. Bryan was donated by him to the Smithsonian Institution in 1892.

The mourning dove (*Zenaidura macroura*) has already been shown to be preeminently a seed eater. It consumes great quantities of weed seed and is a useful species on the farm. Three stomachs were collected.

VULTURES.

The turkey buzzard (*Cathartes aura*) is a useful scavenger. Its work on the Bryan farm at Marshall Hall has been described (see p. 53).

HAWKS.

The following hawks were noted:

Marsh hawk (*Circus hudsonius*), 1.
Sharpshinned hawk (*Accipiter velox*).
Cooper hawk (*Accipiter cooperi*).
Red-tailed hawk (*Buteo borealis*).
Red-shouldered hawk (*Buteo lineatus*), 1.
Broad-winged hawk (*Buteo platypterus*), 1.
Golden eagle (*Aquila chrysaëtos*).[a]
Bald eagle (*Haliæetus leucocephalus*).
Sparrow hawk (*Falco sparverius*).
Osprey (*Pandion haliaëtus carolinensis*).

The species which are injurious to poultry, game, and fish and those which are useful in destroying noxious rodents have already been discussed (see pp. 50–55). A stomach of each of the following hawks was examined: Marsh hawk, red-shouldered hawk, and broad-winged hawk. The first contained a meadow mouse; the second, part of a crayfish and 2 frogs; and the third, 2 beetles—a May-beetle (*Lachnosterna*) and a tumblebug (*Geotrupes splendidus*)—part of a meadow mouse, and the remains of 4 short-tailed shrews and a snake (*Storeria*).

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[a] Recorded on authority of Robert L. Ferguson, of Washington, D. C.

A young broad-winged hawk, old enough to fly, which was kept for several weeks, exhibited interesting feeding habits. When a live mouse was placed in the cage, the hawk pounced on it with both feet, sinking its talons into the mouse's vitals, but not once using its beak until after the death struggle. As soon as the mouse had been struck the hawk uttered continual high-keyed shrieks, spread its wings and tail, and pressed them against the ground so as to make an inclosure or tent, the opening of which it guarded with its beak. No such spreading of the wings and tail took place when the prey consisted of big moths, grasshoppers, or beetles. When a three-quarters-grown English sparrow was placed in the cage the hawk struck it a blow with one foot, clutching and killing it instantly. Still gripping the sparrow, it pulled the head off with its beak and swallowed it. Next it ripped open the body cavity and ate the whole digestive tract at one mouthful. Then, beginning with one leg, it finished the sparrow in four more mouthfuls.

The sparrow hawk is the most useful destroyer of insect pests (grasshoppers), while the marsh hawk is the most valuable enemy of injurious rodents. During the fall the latter may be seen skimming over the fields, pouncing upon meadow mice and remaining for some time in the grass eating its prey. This habit has made it an easy mark for the farmers at Marshall Hall, who, on seeing it drop into the grass to feed, have been accustomed to run, often several hundred yards, and shoot it as it rises.

OWLS.

Three short-eared owls (*Asio accipitrinus*) which were killed during November, 1899, 1901, and 1902, contained nothing but meadow mice.

The barred owl (*Syrnium varium*) occurs at Marshall Hall, but is not common.

On May 30, 1892, Mr. E. A. Preble, of the Biological Survey, collected 3 young and 2 adult screech owls (*Megascops asio*) and a great horned owl (*Bubo virginianus*) near the mouth of the calamus swamp on the Bryan farm. Screech owls are of much economic value, owing to the fact that they feed largely on insects and do not destroy birds or poultry. The stomachs of those taken by Mr. Preble contained May-beetles and lizards. In the stomach of the great horned owl were the remains of several dung-beetles, insects of neutral effect on agriculture. As a rule, this bird takes few insects of any kind and is very injurious to poultry.

CUCKOOS.

One black-billed cuckoo (*Coccyzus erythrophthalmus*) and 2 yellow-billed cuckoos (*Coccyzus americanus*, fig. 30) were collected on the Bryan farm in the latter half of May. They had eaten 1 spider, 1 click-beetle, 1 sap-beetle (*Euphoria inda*), 2 rose-chafers (*Macrodactylus subspinosus*), 10 locust leaf-mining beetles (*Odontota dorsalis*), 20 beetles of the firefly family, 1 skipper butterfly (*Eudamus*), 20 caterpillars, of which 18 were the repulsive, large, spiny, black larvæ of the mourning-cloak butterfly (*Vanessa antiopa*), 4 bugs, of which 1 was a green soldier bug (*Nezara hilaris*), and another *Metapodius femoratus*, 10 May-flies, and 20 black insects related to the dobson and known as *Sialis infumata*. Rose-chafers, which are very destructive insects, are eaten by only a few birds. The skipper and cabbage butterflies were the only butterflies eaten by Marshall Hall birds. The larvæ of the mourning-cloak butterfly are often selected by cuckoos, as are also other hairy and spiny caterpillars that other birds avoid. Caterpillars, largely in such forms, make half of the cuckoo's food, grasshoppers and their allies about a third, and beetles, with small numbers of miscellaneous insects, the remaining sixth. The cuckoo is not abundant on the farm. It is undoubtedly the most useful of the exclusively insectivorous birds found at Marshall Hall, because of the protection it gives to the foliage of forest and orchard.

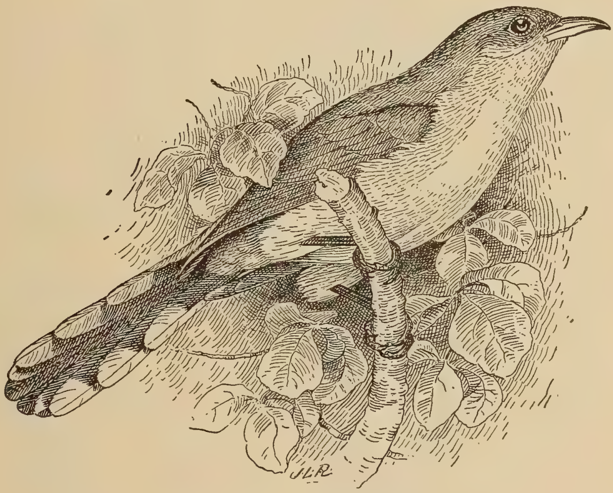

FIG. 30.—Yellow-billed cuckoo.

KINGFISHERS.

One pair of kingfishers was seen continually along the shore of lots 1 and 2 (Pl. III, fig. 2), and another pair nested in the sandy bluff of the Hungerford farm. The food of the bird has already been mentioned in connection with the piscivorous habits of birds (see p. 53). The stomachs of 5 nestlings were examined.

WOODPECKERS.

The following woodpeckers were noted at Marshall Hall:

Downy woodpecker (*Dryobates pubescens*), 13.
Yellow-bellied sapsucker (*Sphyrapicus varius*), 2.
Pileated woodpecker (*Ceophlœus pileatus*).
Red-headed woodpecker (*Melanerpes erythrocephalus*), 1.
Red-bellied woodpecker (*Melanerpes carolinus*).
Flicker (*Colaptes auratus*), 2.

The stomachs of 13 downy woodpeckers were collected. All contained insects and 2 fruit—the berries of smilax and poison ivy. Ants appeared to be the favorite food, having been eaten by all the birds except one. Beetles and their larvæ had been eaten by 8 birds. The kinds selected were click-beetles, ground-beetles (*Amara*), darkling-beetles (*Helops æreus*), and longicorn-beetles (*Elaphidion*). Caterpillars, including *Catocala*, were found in 3 stomachs; miscellaneous insects, principally fly-like insects, in 4; snails in 2, and spiders in 7. Vegetable food amounted to one-fourth of the whole, a proportion probably diminished by the fact that 4 of the stomachs were those of young birds. As the downy woodpecker feeds largely on wood-boring insects and other species that infest tree trunks, it is useful in woodland and orchard.

The yellow-bellied sapsucker (fig. 31) is the cause of all the maledictions that have been heaped on the woodpecker tribe. It secures a large part of its food by drilling holes in tree trunks to serve as wells for collecting the sap on which it feeds. In examining 81 stomachs of this woodpecker, Professor Beal found that sapwood or alburnum formed 23 percent of their contents, a circumstance that indicates the importance of sap in the economy of this species. Sap itself can not be detected unless the stomach is examined immediately, which is impracticable in the case of stomachs sent to the Department of Agriculture.

Several authors have mentioned the fact that this bird kills birches. The following field notes show the manner in which it works injury to apple trees:

In the summer of 1895 there was on the Bryan farm a little orchard of 9 apple trees, about twelve years old, that appeared perfectly healthy. In the fall sapsuckers tapped them in many places, and during spring and fall of the next four years they resorted to them regularly for supplies of sap. Observations were made (October 15, 1896) of two sapsuckers in adjoining trees of the orchard. From a point 20 feet distant they were watched for three hours with powerful glasses to see whether they fed to any considerable extent on ants and other insects that were running over the tree trunks. In that time one bird seized an ant and the other snapped at some flying insect. One drank sap from the drills 30 and the other 41 times. Later in the day one drilled 2 new holes and the other 5. The holes were made in more or less regular rings about the trunk, one ring close above another, for a distance of 6 to 8 inches. The drills were about a quarter of an inch deep, and penetrated the bark and the outer part of the wood.

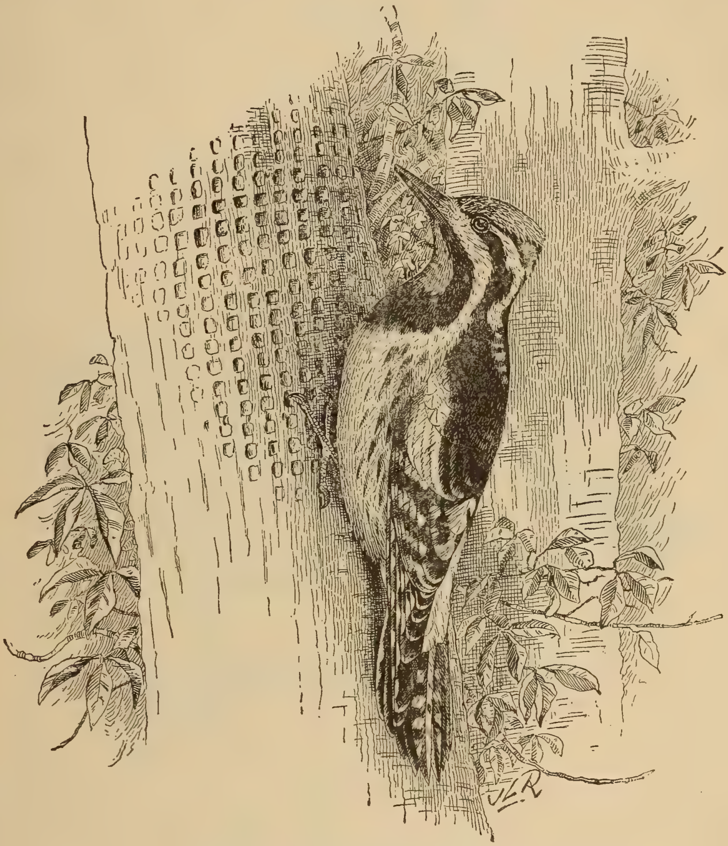

FIG. 31.—Yellow-bellied sapsucker.

In November, 1900, 7 of the 9 trees were dead and the others were dying. A strip of bark 7 inches long by 2 wide, where the sapsuckers had worked in 1896, was torn off and found to contain 84 drills, an average of 6 to the square inch. Many of them were so close together that the tissue between had broken down, leaving rents in the bark an inch or two long, and in some places almost girdling the tree. The loss of sap must have been an exhausting drain, but it was not the sole cause of death. Beetles of the flat-headed apple borer, attracted by the exuding sap, had oviposited in the holes, and the next generation, having thus gained an entrance, had finished the deadly work begun by the sapsuckers. Holes made by birds are sometimes closed by burl-like knobs of wood, but if they remain open the death of the tree from borers is very likely to result. In the case of the trees killed at Marshall Hall, galleries made by borers had honeycombed the wood beneath the section of bark riddled by the sapsuckers.

Only 2 stomachs of sapsuckers were collected. They were taken during the middle of November, 1899 and 1900, and contained several dung-beetles (*Aphodius*) and the fruit of woodbine and red cedar.

The red-headed woodpecker is not common at Marshall Hall, though it was seen in small numbers every fall. One specimen taken November 29, 1900, among the swamp oaks south of lots 4 and 5, had eaten gall insects (Cynipidæ) and many bits of the woody tissue of the gall. This woodpecker makes about half its food on vegetable matter, largely mast with some berries, and selects for its insect food chiefly beetles, ants, and grasshoppers. It is, on the whole, useful.

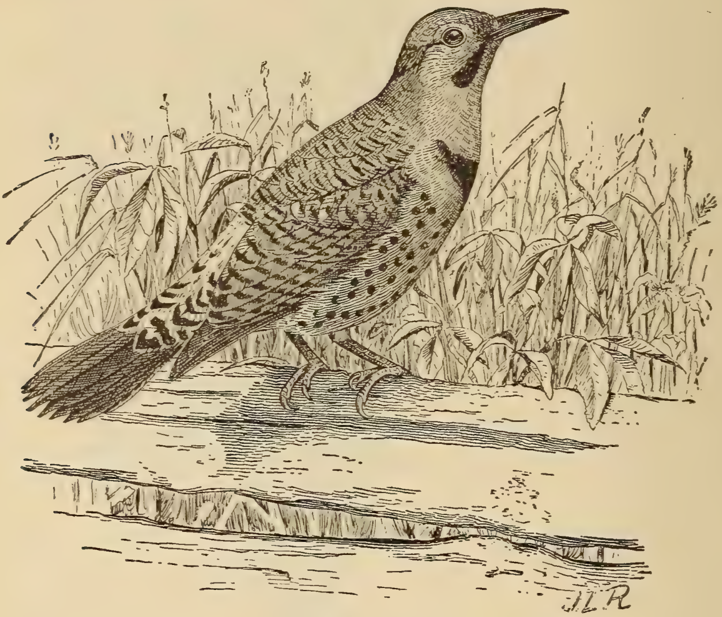

FIG. 32.—Flicker.

The flicker (fig. 32), though nesting on the farm, was common only during migration, when it was seen in flocks of from 6 to 12. A stomach collected in the middle of November, 1899, contained 10 ground-beetles (including *Anisodactylus*, *Harpalus pennsylvanicus*, and *Pterostichus sayi*), 5 ants, 1 sow bug, 1 black cricket and skin, and 20 seeds of woodbine berries. The flicker is somewhat more insectivorous than the redhead. Its vegetable food usually consists of a little mast and a good deal of wild fruit. It is less of a woodpecker than any other species of the family, for it is much less arboreal and spends a large part of the time on the ground securing ants with its long sticky tongue. As many as 5,000 ants have been taken from one stomach. So important is this article of diet that it forms three-fourths of the insect food of the species.

WHIP-POOR-WILLS, NIGHT-HAWKS, SWIFTS, AND HUMMING-BIRDS.

Whip-poor-wills (*Antrostomus vociferus*) and night-hawks (*Chordeiles virginianus*), two exclusively insectivorous species, are highly useful. The former was frequently heard, and the latter was frequently seen in late summer as it soared over the farm after ants.

The chimney swift (*Chætura pelagica*) is, as might be expected, wholly insectivorous. Three birds collected July 18, 1898, had caught the following insects on the wing: One small bee (Andrenidæ), 3 bugs (Heteroptera), and 34 weevils (*Sitones hispidulus*).

The ruby-throated hummingbird (*Trochilus colubris*) feeds on insects and the nectar of flowers. During the last of May it visited the flowers of the persimmon, in June the honeysuckle, and later tobacco and the trumpet creeper. A bird that was shot fresh from a trumpet flower had eaten 1 little green bee (Andrenidæ) and 1 minute spider.

FLYCATCHERS.

The following species of flycatchers have been noted at Marshall Hall:

Scissor-tailed Flycatcher (*Muscivora forficata*). Noted by Mr. O. N. Bryan.
Kingbird (*Tyrannus tyrannus*), 16.
Great crested flycatcher (*Myiarchus crinitus*), 4.
Phœbe (*Sayornis phœbe*), 3.
Wood pewee (*Contopus virens*), 11.
Acadian flycatcher (*Empidonax virescens*), 1.

Sixteen kingbirds were collected from May 28 to July 30. Insects formed 71 percent and fruit 29 percent of their food. The fruit consisted of cherries, sassafras, wild and cultivated mulberries, elder, and blackberries. The proportion of insect food was not so large as is typical for the species, a circumstance resulting probably from the readiness with which fruit could be obtained. Beetles constituted 37 percent of the food, grasshoppers and crickets 23 percent, ants and bees 4 percent, parasitic wasps 2 percent, miscellaneous insects, including caterpillars and bugs, 3 percent, and spiders 2 percent. Among the miscellaneous insects were a stink bug (*Hymenarcys nervosa*), an assassin bug (*Sinea diadema*), and a whole cabbage butterfly (*Pieris rapæ*). The bees included small wild species (Andrenidæ) and drones of honey bees. The parasitic wasps included forms of the families Ichneumonidæ and Scoliidæ. Of the beetles, which were by all means the most interesting element of the insect food, ground-beetles (including *Anisodactylus* and *Cratacanthus dubius*) furnished 2 percent, tiger-beetles, soldier-beetles (*Chauliognathus pennsylvanicus*), and dung-beetles (*Atænius* and *Aphodius*) 3 percent, and injurious beetles of the following species 30 percent:

Rose-chafer (*Macrodactylus subspinosus*).
Southern June-beetle (*Allorhina nitida*).
Shining leaf-chafer (*Anomala*).
Sad flower-beetle (*Euphoria melancholica*).
Long-horned beetles (including *Leptura*).
Locust leaf-mining beetle (*Odontota dorsalis*).
Blister-beetle (*Epicauta cinerea*).
Asparagus-beetle (*Crioceris asparagi*).

Asparagus-beetles and blister-beetles are scarcely ever eaten by other birds and rose-chafers seldom; hence the service rendered by the kingbird in destroying these insects and others of an injurious character in large numbers makes it one of the most valuable allies of the farmer.

Of the remaining flycatchers collected, the wood pewee and the Acadian flycatcher are purely insectivorous, and the phœbe and the great crested flycatcher, though subsisting chiefly on insects, quite often, especially in late summer, vary their fare with fruit.

One Acadian flycatcher was collected. It had eaten a spider, a parasitic wasp, a long-horned beetle, a leaf-beetle (*Crepidodera*), and a banded-winged horsefly (*Chrysops*).

Of 11 wood pewees all had taken beetles, including click-beetles, long-horned beetles (*Leptura rubrica*), dung-beetles (*Onthophagus pennsylvanicus*), soldier-beetles (*Chauliognathus pennsylvanicus*), locust leaf-mining beetles (*Odontota dorsalis*) and a related leaf-beetle (*Hæmonia nigricornis*), and weevils of the species *Phytonomus punctatus* and *Sphenophorus zeæ*. Seven had destroyed parasitic wasps, including Braconidæ, Evaniidæ, Ichneumonidæ (*Mesostenus* and others), and Scoliidæ (*Tiphia inornata*); 4 had eaten flies (*Chironomus*, *Sapromyza vulgaris*, *Lucilia cæsar*, and other muscid flies); 1 had taken a moth; and 3 had eaten, respectively, a caddis-fly, a May-beetle, and a spider. Although the wood pewee destroys large numbers of injurious insects, especially beetles, it feeds so eagerly on the useful parasitic wasps that its scarcity at Marshall Hall was perhaps fortunate for the owners of the farms.

Three phœbe (fig. 33) stomachs were collected. Their contents were chiefly beetles of the following kinds:

Anisodactylus.
Cicindela.
Chauliognathus pennsylvanicus.
Canthon.
Aphodius inquinatus.
Onthophagus pennsylvanicus.
Lachnosterna.
Odontota dorsalis.
Orsodachna atra.
Collops quadrimaculatus.
Lema trilineata.

In smaller numbers the birds had eaten flying ants, parasitic wasps, and other wasps, bugs, caddis-flies, and spiders. One had tasted blackberries.

Four great crested flycatchers were collected in May. Their stomachs contained May-flies, ants (*Camponotus pennsylvanicus* and other forms), parasitic wasps (Ichneumonidæ, Scoliidæ (*Tiphia*) and Evaniidæ), bugs (*Euschistus* and *Nezara hilaris*), and beetles (Curculionidæ, Elateridæ, *Cicindela sexguttata*, *Dicerca*, and *Odontota dorsalis*). Despite their taste for parasitic wasps both phœbe and great crested flycatcher are in the main useful on account of the large number of insect pests they destroy.

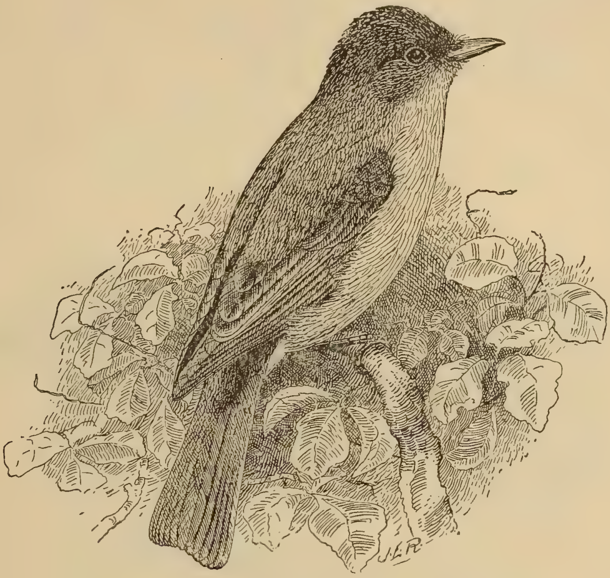

FIG. 33.—Phœbe.

HORNED LARKS.

When the horned lark (*Otocoris alpestris*) occurred at Marshall Hall, as it did occasionally in severe winter weather, it subsisted almost entirely on seeds, largely weed seeds, often with waste grain. A bird collected during the severe blizzard of February, 1900, was feeding in a wind-swept cowyard, where it secured a bit of a kernel of corn, 4 seeds of lamb's-quarters, 8 of crab-grass, 10 of bastard pennyroyal, and 12 of ragweed.

BLUE JAYS AND CROWS.

Six blue jays (*Cyanocitta cristata*, fig. 34) were collected in May and November. All except one had taken insects. Beetles were the most important element and comprised *Chlœnius æstivus*, *Lachnosterna*, *Euphoria fulgida*, *Onthophagus*, Elateridæ, and Curculionidæ. The less important element was composed of parasitic wasps, May-flies, and grasshoppers (Locustidæ). One bird had eaten a snail and one a spider. One had taken mulberries and all had eaten acorns. Mast formed half the total volume of food. None of these six specimens had eaten grain, which usually enters into the blue jay's food to some extent, and in certain localities in New Hampshire that came under direct observation furnished a significant part of it. The blue jay takes about three times as much vegetable as animal food. It appears to do no harm at Marshall Hall and consumes a fair quantity of injurious beetles, grasshoppers, and caterpillars.

The common crow (*Corvus americanus*) was much more numerous on the farm than the fish crow (*Corvus ossifragus*). Four stomachs of the former species were collected. In the case of this bird, which, as has been shown, attacks poultry and grain (see pp. 50 and 65), protection is not desirable at Marshall Hall. Elsewhere the species may do as much good as harm, perhaps even more, but here local conditions make encouragement of its presence incompatible with prudent farming.

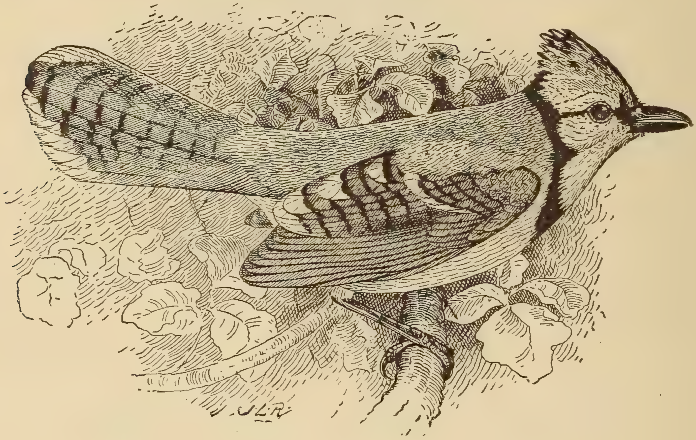

FIG. 34.—Blue jay.

MEADOWLARKS, BOBOLINKS, AND COWBIRDS.

The meadowlark (*Sturnella magna*) is one of the class of highly useful birds. It is commonly supposed to be largely vegetarian, but it really takes about three times as much animal matter as vegetable. One-third of this major part is usually composed of grasshoppers, though these insects were not abundant enough at Marshall Hall to enter largely into the food of the 7 meadowlarks collected. Injurious beetles and caterpillars, however, were taken in customary quantities. The meadowlark, which is commonly regarded as a game bird at

Marshall Hall, is frequently shot, and its valuable work as a destroyer of weed seed and insects is thus often cut off.

When the bobolink (*Dolichonyx oryzivorus*, fig. 35) tarries on the farm in its southward migration it lives wholly on the wild rice of the calamus swamp, but on its return journey in May it eats injurious insects and weed seed of the wheat and clover fields. Six stomachs were collected in May.

The cowbird (*Molothrus ater*), as has been shown by Prof. F. E. L. Beal,[a] takes three times the volume of seeds that it takes of insects. Both of the 2 stomachs examined contained grasshoppers (*Xiphidium* and *Melanoplus*) and 1 of them leaf-hoppers, two elements characteristic of the insect food of the species. The bird does little damage to grain fields, and renders much service with other birds in reducing the weed-seed harvest of the farm.

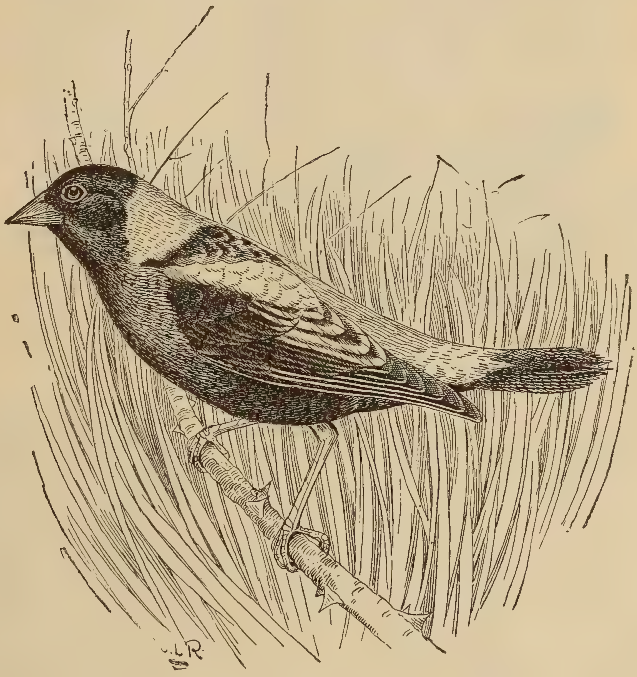

FIG. 35.—Bobolink.

BLACKBIRDS AND ORIOLES.

The red-winged blackbird (*Agelaius phœniceus*, fig. 36), however destructive to grain it may be elsewhere, does no damage in the grain-fields at Marshall Hall. Its insect food, which is to its vegetable food as one to three, is composed largely of weevils, caterpillars, and grasshoppers. Its good work among weeds has been previously described (see p. 77). Eight stomachs were examined, but with little significance of result, for the temporary abundance of May-flies had diverted the birds from insect pests.

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[a] Bobolink, Blackbirds, and Grackles. Bull. No. 13, Biological Survey, Dept. of Agriculture, p. 29, 1900.

One stomach of the rusty blackbird (*Scolecophagus carolinus*) was collected April 14, 1899. It contained beetles (*Harpalus* and *Sitones*), 1 caterpillar, 1 small bee, and some waste corn. The character and extent of weed-seed destruction by rusty blackbirds on the farms at Marshall Hall has been shown on p. 77.

Crow blackbirds (*Quiscalus quiscula*) have been proved by examination of thousands of stomachs to take fully twice as much vegetable as animal food, the vegetable food being chiefly grain and fruit. And at Marshall Hall, after the young were established in life and the hosts of Northern birds, including the subspecies *Quiscalus quiscala æneus*, had arrived, systematic pillage of grain fields took place (see p. 67), which could be checked only by the shotgun. Twenty-five stomachs of the species were examined.

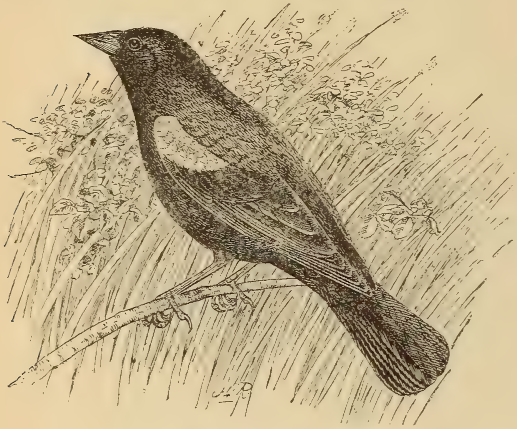

FIG. 36.—Red-winged blackbird.

The orchard oriole (*Icterus spurius*) is a summer resident at Marshall Hall and may usually be found nesting during the breeding season to the extent of a dozen pairs, though the present summer (1902) formed an exception to this rule, the usual number being reduced to 2 or 3. The food of this species, as shown in 11 stomachs collected during May and June, was composed of 91 percent animal matter and 9 percent vegetable matter. The latter part was nearly all mulberries; the former was distributed as follows: Fly larvæ, 1 percent; parasitic wasps, 2 percent; ants, 4 percent; bugs, 5 percent; caterpillars, 12 percent; grasshoppers, including a few crickets, 13 percent; beetles, 14 percent; May-flies, 27 percent; spiders, 13 percent. Thus beneficial insects—parasitic wasps—formed only 2 percent of the food, and injurious species—caterpillars, grasshoppers, and harmful beetles—amounted to 38 percent.

The Baltimore oriole (*Icterus galbula*) is also a highly insectivorous, useful species, but occurs at Marshall Hall only during migration. One bird was collected May 29, 1896. It had eaten mulberries, 2 small wasps, 2 fall webworms, 1 click-beetle, and 15 locust leaf-mining beetles.

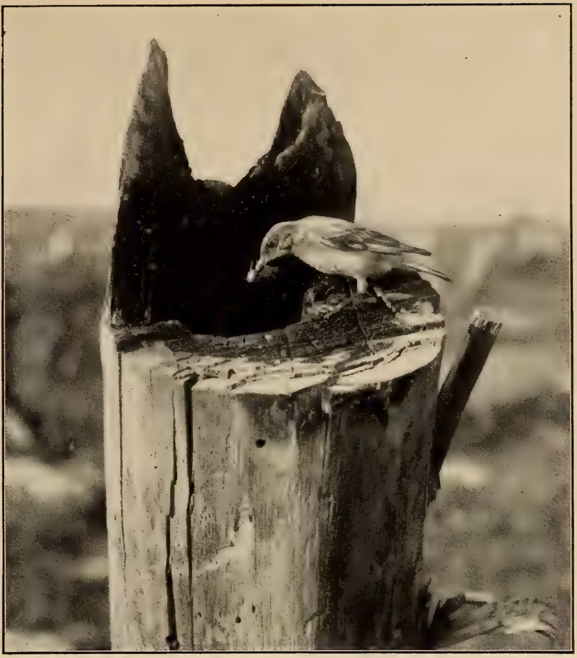

FIG. 1.—BLUEBIRD AT EDGE OF NEST WITH GRASSHOPPER IN MOUTH.

From photograph by Rev. P. B. Peabody.

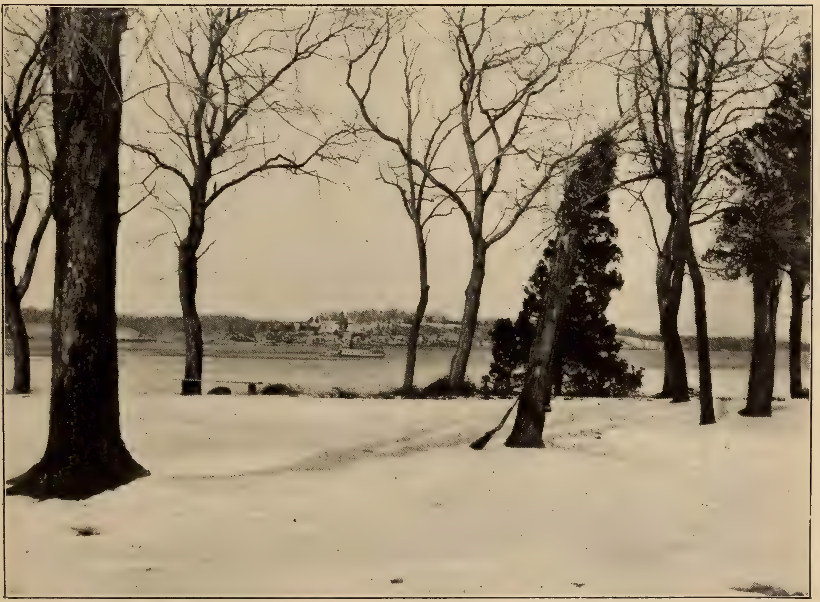

FIG. 2.—FORMER NESTING SITE OF BLUEBIRDS ON LAWN AT BRYAN FARM.

The hole used by the birds may be seen about halfway to the top of the tree against which the gun is leaning. As in Plate I Mount Vernon is to be seen in the distance.

FINCHES AND SPARROWS.

One purple finch (*Carpodacus purpureus*) was collected (February 20, 1900) from a flock feeding on cedar berries. Examination revealed, therefore, only remains of this fruit.

Specimens of the red crossbill (*Loxia curvirostra minor*) and the white-winged crossbill (*Loxia leucoptera*) were collected at Marshall Hall by Mr. O. N. Bryan, who presented them to the U. S. National Museum.

Eleven goldfinches (*Astragalinus tristis*) were collected. Insects (caterpillars) had been eaten by only one, practically all the food consisting of seeds, principally weed seeds. The goldfinch is probably the most useful seed-eater on the farm.

Several pine siskins (*Spinus pinus*) were seen December 1, 1901, in company with goldfinches.

The following native sparrows were noted:

Vesper sparrow (*Poœcetes gramineus*).
Savanna sparrow (*Ammodramus sandwichensis savanna*), 1.
Grasshopper sparrow (*Ammodramus savannarum passerinus*), 10.
Henslow sparrow (*Ammodramus henslowi*), 1.
White-throated sparrow (*Zonotrichia albicollis*), 17.
Tree sparrow (*Spizella monticola*), 9.
Chipping sparrow (*Spizella socialis*), 61.
Field sparrow (*Spizella pusilla*), 31.
unco (*Junco hyemalis*), 11.
Song sparrow (*Melospiza melodia*), 36.
Lincoln sparrow (*Melospiza lincolni*).
Fox sparrow (*Passerella iliaca*).

From May to September, inclusive, half the food of field, song, chipping, and grasshopper sparrows consists of insects. The grasshopper sparrow is the most insectivorous of the four, but a description of the insect food taken by it at Marshall Hall will serve, because of similarity, to indicate that of the other three. The main part was composed of beetles, caterpillars, and grasshoppers. The beetles included *Sitones hispidulus*, *Drasterius*, *Systena elongata*, *Systena blanda*, *Colaspis brunnea*, *Anisodactylus*, and *Atænius*. The caterpillars belonged chiefly to the family Noctuidæ, including many cutworms and army worms. Caterpillars of the family Geometridæ were occasionally eaten. The grasshoppers were of the genera *Xiphidium*, *Scudderia*, *Melanoplus*, *Hippiscus*, and *Dissosteira*. The following bugs also had been eaten: *Corizus*, *Trichopepla semivittata*, *Hymenarcys nervosa*, and *Alydus pilosulus*. Spiders were frequently taken.

The chipping and field sparrows sometimes destroy small numbers of useful parasitic wasps, and the song sparrow now and then eats the less beneficial smaller ground-beetles. The insectivorous habits of all these native species are, on the whole, however, extremely valuable to man. The consumption of weed seeds, the chief service of these birds as well as of those that visit the farm only in the colder season, has already been emphasized (see p. 72). For a detailed account of the food habits of sparrows the reader is referred to 'The Relation of Sparrows to Agriculture.'[a] As there shown, and as set forth in the first part of this bulletin (see p. 17), the English sparrow differs radically in habits from the native sparrows and is a pest that should be exterminated.

One towhee (*Pipilo erythrophthalmus*) was taken September 9, 1896. Its stomach was found to contain a locust leaf-mining beetle, a weevil, a ground-beetle, a bug, a cricket, 6 ants, and remains of broken seeds.

Ten cardinals (*Cardinalis cardinalis*) were collected from February to November, inclusive, with the omission of March. Twenty-two percent of their food consisted of animal matter (insects and spiders) and 78 percent of vegetable matter (half fruit and half seeds). Of the minor proportion, bugs formed 1 percent; spiders, May-flies, and grasshoppers, each 2 percent, and beetles 15 percent. The beetles were as follows: *Agrilus egenus*, *Dicerca obscura*, *Macrodactylus subspinosus*, *Donacia*, *Odontota dorsalis*, *Hyperplatys aspersus*, *Anisodactylus agricola*. On November 29, 1901, two cardinals were noted eating seeds of the tulip tree.

One stomach of the indigo bird (*Cyanospiza cyanea*) was examined. It held 1 beetle (*Agrilus egenus*) and a little vegetable débris.

TANAGERS.

At Marshall Hall tanagers were never detected pilfering cultivated fruit, as they have often been known to do elsewhere.

One summer tanager (*Piranga rubra*), collected August 5, 1898, had eaten wild blackberries, a bee (*Agapostemon*), and a scoliid wasp.

Three scarlet tanagers (*Piranga erythromelas*), taken in May and August, had fed exclusively on insects, which comprised a bee (*Halictus*), parasitic wasps, white ants, a soldier bug (*Nezara hilaris*), click-beetles, darkling-beetles (*Helops micans*), and the sad flower-beetle (*Euphoria melancholica*).

SWALLOWS.

The following swallows were noted:

Purple martin (*Progne subis*)	2
Barn swallow (*Hirundo erythrogastra*)	10
White-bellied swallow (*Tachycineta bicolor*)	5
Bank swallow (*Riparia riparia*)	6
Rough-winged swallow (*Stelgidopteryx serripennis*)	7

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[a] The Relation of Sparrows to Agriculture. Bull. No. 15, Biological Survey, Dept. of Agriculture, Washington, 1901.

Thirty swallows, collected between the middle of May and the middle of August, had eaten nothing but insects. Parasitic wasps and bees formed 2 percent of their food (less than usual with aerial feeders), bugs 3 percent, May-flies 8 percent, beetles 13 percent, white ants 21 percent, ants 33 percent, and miscellaneous insects, principally flies with a few bugs, 20 percent. The forms selected were bees of the family Andrenidæ, and parasitic wasps of the families Scoliidæ, Ichneumonidæ, and Chalcididæ. The beetle food was interesting, for besides click-beetles, dung-beetles (*Aphodius inquinatus*, *Hister*, *Atænius*, and *Onthophagus pennsylvanicus*), weevils of several species, and metallic woodborers (*Agrilus*), it included the engraver beetles (among them *Tomicus cacographus*), which are destroyed by only few other birds. The food of swallows is peculiar in its lack of caterpillars and grasshoppers, which are so important to the subsistence of other birds. As with flycatchers, the number of flies taken is generally overestimated. In the stomachs examined were found snipe-flies (Leptidæ), golden-green flesh-flies (*Lucilia cæsar*), and other muscidæ, with an occasional banded-winged horse-fly (*Chrysops*).

CEDAR BIRDS.

The cedar bird (*Ampelis cedrorum*, fig. 37) is the most frugivorous of the Marshall Hall birds. More than four-fifths of its food was fruit, the remainder insects. Though often troublesome elsewhere, it does no harm here, and accomplishes some good through its slightly insectivorous habit. Five stomachs were collected in May. One contained cherries, one mulberries, and a third smilax berries. Insects (locust leaf-mining beetles and May-flies) were found in three.

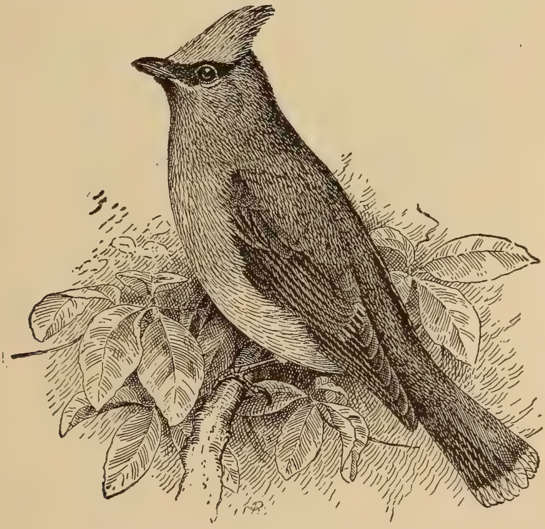

FIG. 37.—Cedar bird.

SHRIKES.

The impaling of grasshoppers and mice by the loggerhead shrike (*Lanius ludovicianus*) near the storage barn has already been mentioned (see p. 54). The only other field observation was on October 23, 1901, when a shrike near the same place was seen to kill a garter snake (*Eutainia*) 13 inches long. Owing to the small number of shrikes at Marshall Hall no specimens were taken, but in order to investigate the feeding habits some experiments were carried on with a captive bird given me by Mr. William Palmer. The habit the bird has of impaling prey has been the subject of considerable speculation, some writers maintaining that it gibbets its victims alive for the pleasure of watching their death struggles, and others that it slaughters more game at a time than it can eat and hangs up the surplus to provide against a time of want. This theory of prudent foresight may explain why it kills more game than it can eat, but, as the experiments showed, it does not touch the real reason why it impales its prey.

On the day after the shrike in question was captured a dead mouse was offered it. The shrike raised its wings, moved its tail up and down petulantly after the manner of the phœbe, and then seized the mouse and dragged it about for several minutes, trying to wedge it into first one and then another corner of the cage. Failing in this effort, it tried to impale the mouse on the blunt broken end of a branch that had been placed in the cage for a perch, but the body fell to the floor. Then it tried to hold the mouse with its feet and tear it to pieces, but its feet were too weak. A nail was now driven into the cage so as to expose the point. Immediately the shrike impaled its prey, fixing it firmly, and then fell to tearing and eating ravenously. Several days later the nail was removed and a piece of beef was given to the shrike. By dint of hard work it managed to hold the beef with its feet, so that it could bite off pieces; but it much preferred to have me do the holding, when it would perch on my wrist and pull off mouthfuls in rapid succession. These experiments indicate that the shrike is unable to tear to pieces food that is not securely fixed. Hawks can grip their food with their powerful talons and then easily tear it into pieces small enough to be swallowed, but the shrike's feet have not a sufficiently vigorous clutch to permit this method.

A series of experiments in feeding insects to this shrike was also carried out. If the bird was very hungry it did not impale insects. When offered a grasshopper (*Hippiscus*) at such times, it would clutch it with one foot, and, resting the bend of its leg on the perch, bite off mouthfuls and swallow them. When not very hungry it impaled grasshoppers and caterpillars (*Sphinx catalpæ*). Such prey as the thousand-legs, centipedes (*Lithobius*), house-flies, and blow-flies (*Cal-*

liphora vomitoria), and in a single instance, a mourning-cloak butterfly, it ate at a single gulp, but very large insects, such as tumblebugs (*Copris carolina*), it always impaled. It refused larvæ of the mourning-cloak butterfly, the forest tent caterpillar, the fall webworm, and the tussock moth. It would not eat a skin-beetle (*Trox*), but took with relish May-beetles (*Lachnosterna*), flower-beetles (*Trichius piger*), and long-horned beetles (*Monohammus*). Insects provided with especial protective devices were used in some of the experiments. Drone and worker honey bees were eaten, but with no apparent relish. The highly flavored cabbage bug (*Murgantia histrionica*) was rejected, but its near relative (*Euschistus*), a stink bug, was greedily devoured. The investigation of insect food was concluded with tests by means of certain beetles possessing ill-flavored, highly irritating secretions. A burying-beetle (*Silpha inæqualis*), a 12-spotted cucumber-beetle (*Diabrotica 12-punctata*), and a blister-beetle (*Epicauta vittata*), were refused, but an oil-beetle (*Meloe angusticollis*), provided with very powerful irritating secretions, was eaten with relish. The moth of the salt-marsh caterpillar, an insect with a vile odor, was also very palatable. The green ground-beetle (*Calosoma scrutator*), which throws out a nauseous volatile, acid fluid, highly irritating, was tried. When this big insect was placed in the cage, the shrike seized it by the prothorax, bit it vigorously and knocked off its head, and then impaled the body. The beetle's pungent odor filled the room, but the shrike removed the elytra with its bill, and after swallowing the thorax bolted the abdomen at a gulp. In the next experiment a *Calosoma* was so presented to the shrike that the latter had to seize it by the tip of the abdomen. The beetle ejected its irritating ill-smelling secretion full in the bird's face. The shrike staggered an instant, then flew to the farther side of the cage, apparently in distress. It was several days before it dared to accept another *Calosoma.*

A series of experiments with mice, birds, and other vertebrates was also made. When a live mouse was placed in the cage the shrike gave chase, half running, half flying. It soon caught the animal by the loose skin of the back, but quickly let go because the little rodent turned on it savagely. In the next attack it seized the mouse by the back of the neck and bit through the skull into the base of the brain, causing instant death. (A broad-winged hawk experimented with at the same time always killed its victims with its talons, never touching them with its beak until they were dead.) A honey-locust perch, set with sharp thorns 2 inches long, had been put into the shrike's cage, and on this it fixed the mouse, a thorn entering below the shoulder blade and passing out through the breast. Then (10 a. m.) it ate the brains. At 10.30 it picked from twenty to thirty mouthfuls of hair from the hind quarters, made incisions and removed the skin, and then ate the large muscles. By 11.30 it had devoured the whole body, including viscera and skin. Several days later the shrike dispatched a live English sparrow about as it had the mouse, and impaled the carcass. Then it plucked the breast and ate the pectoral muscles, the lungs, and the heart. Live snakes (*Storeria dekayi*) and lizards (*Sceloporus undulatus*) were also fed to the shrike. A toad was put into the cage, and it attacked it, but soon desisted in evident distress, caused probably by the toad's irritating secretions. Frogs and salamanders (*Plethodon*) it relished. Goldfish and bass 2 or 3 inches long it killed, impaled, and ate.

It disgorged indigestible parts of its food in pellets, after the manner of hawks and owls. Pellets of insects were not compact and fell to pieces readily, but those made of remains of mice or birds were firm and kept their shape. When it was fed on May-beetles it disgorged a pellet in one hour and twenty minutes; when fed on a mouse, in three hours. The latter pellet was 7 by 18 millimeters in size and shaped like an olive seed. The largest one ejected contained the remains of a bird and a snake and measured 33 by 11 millimeters. When vertebrates had been eaten their bones were found inside the pellet and the fur, feathers, or scales outside.

VIREOS.

Twenty-five vireos were collected, including 2 warbling vireos (*Vireo gilvus*), 10 white-eyed vireos (*Vireo noveboracensis*), and 13 red-eyed vireos (*Vireo olivaceus*). Ninety-one percent of their food consisted of insects and 9 percent of fruit (mulberries and sassafras). Parasitic wasps formed 2 percent, ants and other Hymenoptera 6 percent, May-flies 4 percent, caterpillars 15 percent, bugs 17 percent, beetles 28 percent, miscellaneous insects 8 percent, and spiders 11 percent. The Hymenoptera, other than ants, comprised jointworm flies, saw-fly larvæ, ichneumon flies, and bees of the genus *Halictus*. The beetles included the following kinds:

Typophorus canellus.
Diabrotica 12-punctata.
Odontota dorsalis.
Mordella 8-punctata.
Symphora rugosa.
Ecyrus dasycerus.
Leptura zebra.
Hyperplatys aspersus.
Anomala.
Crepidodera.
Colaspis brunnea.
Coptocycla bicolor.
Limonius quercinus.
Agrilus.
Helops venustus.
Helops micans.
Tanymecus confertus and other Rhynchophora.

The bugs were stink bugs (*Podisus*), leaf-hoppers (*Jassidæ*), and scale insects (*Kermes*). The yellow-throated vireo (*Vireo flavifrons*) has been noted at Marshall Hall by Mr. William Palmer. All the vireos are very useful protectors of forest and fruit trees.

WARBLERS.

The list of warblers noted at Marshall Hall is given below:

Black and white warbler (*Mniotilta varia*).
Worm-eating warbler (*Helmitherus vermivorus*), 1.
Northern parula warbler (*Compsothlypis americana usneæ*), 1.
Yellow warbler (*Dendroica æstiva*), 7.
Black-throated blue warbler (*Dendroica cærulescens*).
Myrtle warbler (*Dendroica coronata*), 2.
Magnolia warbler (*Dendroica maculosa*), 2.
Chestnut-sided warbler (*Dendroica pensylvanica*).
Black-poll warbler (*Dendroica striata*), 11.
Yellow-throated warbler (*Dendroica dominica*).
Black-throated green warbler (*Dendroica virens*).
Pine warbler (*Dendroica vigorsi*).
Yellow palm warbler (*Dendroica palmarum hypochrysea*). Noted by Mr. William Palmer.
Prairie warbler (*Dendroica discolor*), 1.
Oven-bird (*Seiurus aurocapillus*), 1.
Water-thrush (*Seiurus noveboracensis*), 2.
Louisiana water-thrush (*Seiurus motacilla*), 1.
Kentucky warbler (*Geothlypis formosa*).
Maryland yellow-throat (*Geothlypis trichas*), 13.
Yellow-breasted chat (*Icteria virens*), 4.
Hooded warbler (*Wilsonia mitrata*). Noted by Mr. William Palmer.
Wilson warbler (*Wilsonia pusilla*), 1.
Canadian warbler (*Wilsonia canadensis*), 1.
Redstart (*Setophaga ruticilla*), 5.

Of the food of the 53 specimens collected 96 percent consisted of insects and 4 percent of fruit. The insect food was distributed as follows: Beetles, 21 percent; ants, wasps, and bees, 18 percent; May-flies, 16 percent; caterpillars, 14 percent; bugs (leaf-hoppers, scale insects, and true bugs) 6 percent; miscellaneous insects, including flies, a few grasshoppers, and others, 8 percent; spiders, 11 percent; and miscellaneous invertebrates, principally snails, 2 percent. Of the 21 percent of beetles 3 percent were useful forms, 5 percent neutral, and 13 percent injurious. The following beetles were identified:

Chlænius (larva).
Harpalus (larva).
Anisodactylus rusticus.
Chauliognathus.
Staphylinidæ.
Ptinidæ.
Ligyrus gibbosus.
Euphoria.
Serica vespertina.
Aphodius.
Atænius.
Limonius quercinus.
Cerambycidæ.
Notoxus bicolor.
Bruchidæ.
Rhynchophora (Otiorhynchidæ, *Apion*, etc.).
Xanthonia villosula.
Systena elongata.
Crepidodera helxines.
Odontota dorsalis.

The Hymenoptera comprised the following: 11 percent of the total food, ants, and small bees (*Andrena* and *Halictus*); 4 percent useful parasitic wasps (*Tiphia inornata* and Ichneumonidæ), and 3 percent jointworm-flies and larvæ of saw-flies. The bugs were scale insects, leaf-hoppers, and true bugs, including *Lygæidæ*, *Sinea diadema* and *Podisus*. In several instances warblers had fed on the eggs of bugs.

Some differences naturally appeared between the food of the purely arboreal species and that of the more terrestrial. Water-thrushes took ground-beetles. Maryland yellow-throats secured more grasshoppers than were taken by arboreal warblers. The yellow-breasted chat, larger than the other species, ate such large beetles as *Ligyrus* and *Euphoria*. It also fed on larvæ of ground-beetles, which are outside the feeding range of strictly arboreal warblers. In a chat's stomach elderberries were found, and in the stomachs of two myrtle warblers collected in February was the fruit of red cedar. The arboreal warblers other than the myrtle warbler are probably almost purely insectivorous.

Most of the warblers of the genus *Dendroica* destroy immense quantities of insects. As an illustration of their value in this regard an extract is quoted from a letter concerning the palm warbler received by the Biological Survey from Mr. Robert H. Coleman:

> I counted the number of insects he caught in a minute and found it varied from 40 to 60 per minute. He spent at least four hours on our piazza, and in that time must have gathered in about 9,500 insects.

MOCKINGBIRDS, CATBIRDS, THRASHERS, AND WRENS.

The mockingbird (*Mimus polyglottos*, fig. 38) was usually seen at Marshall Hall only in fall and spring, but during 1902 a pair nested near the cow barn. In the middle of November, 1899, two stomachs were collected. One contained the skin and 25 seeds of pokeberries and another 34 of the same seeds, the leg of an ant, and the remains of a larval ground-beetle. The bird's selection of ants and ground-beetles shows affinity in food habits with its nearest relative, the catbird. Both species are highly frugivorous, and where abundant in fruit-growing districts may do some harm.

The catbird (*Galeoscoptes carolinensis*) is the most numerous bird during the breeding season on the Bryan farm at Marshall Hall. The examination of 74 stomachs, collected from May to August, inclusive, showed that 41 percent of the food consisted of animal matter and 59 percent of vegetable matter. The latter part comprised the following fruits: Cultivated cherries, wild black cherries, black raspberries, dewberries, blackberries, strawberries, mulberries, pokeberries, elder berries, blueberries, and the berries of sassafras, woodbine, and catbrier. Of the animal matter, snails and thousand-legs composed 1 percent, spiders 2 percent, parasitic wasps 1 percent, ants 6 percent, caterpillars 6 percent, beetles 10 percent, May-flies 14 percent, and miscellaneous insects 1 percent, including grasshoppers, bees (*Halictus* and *Andrena*), bugs (*Euschistus*, *Corimelæna*, etc.), and flies (Tipulidæ and *Calliphora vomitoria*, the caddis-flies and larvæ of saw-flies). The caterpillars were cutworms (*Agrotis* and *Nephelodes violans*), and in several cases such bristly larvæ as *Spilosoma*. The parasitic wasps were Ichneumonidæ and scoliid wasps (*Tiphia inornata*). Ants are a characteristic element of the food. In the present instance they included *Lasius*, *Tetramorium*, *Formica subsericea*, and *Camponotus pennsylvanicus*. The coleopterous food is interesting because four-fifths of it consisted of injurious beetles. The list of beetles identified is as follows:

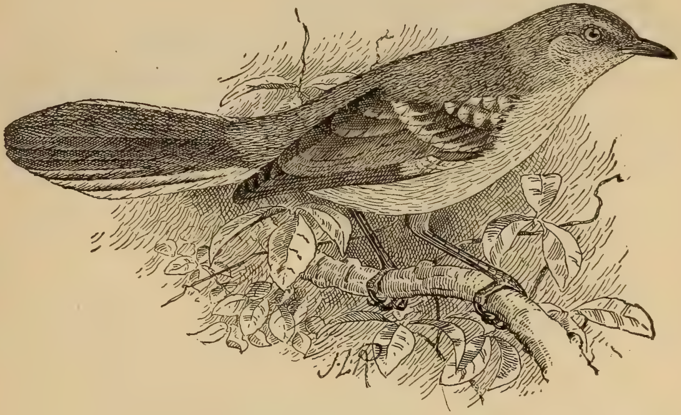

FIG. 38.—Mockingbird.

Lachnosterna.
Anomala lucicola.
Dichelonycha.
Onthophagus pennsylvanicus.
Aphodius.
Odontota dorsalis.
Longitarsus.
Hæmonia nigricornis.
Corymbites pyrrhos.
Monocrepidius auritus.
Anisodactylus rusticus.
Brachylobus lithophilus.
Cychrus stenostomus.
Harpalus.
Chlænius.
Staphylinus cinnamopterus.
Chauliognathus.
Hister.
Tenebrionidæ.
Epicærus imbricatus.
Tanymecus confertus.

Were cherries, blackberries, and raspberries raised for market on the farm in large quantities, the host of catbirds with their highly frugivorous habits might do harm, but as this is not the case they not only cause no loss but are beneficent through their destruction of insect pests.

The brown thrasher (*Toxostoma rufum*, fig. 39), which is not common on the Marshall Hall farm, is somewhat more insectivorous than its relative the catbird. Only one stomach was collected. This contained black raspberries, cherries, a cricket, a ground-beetle, and a May-beetle. May-beetles appear to be relished by the thrasher and are destroyed wholesale where the bird is abundant.

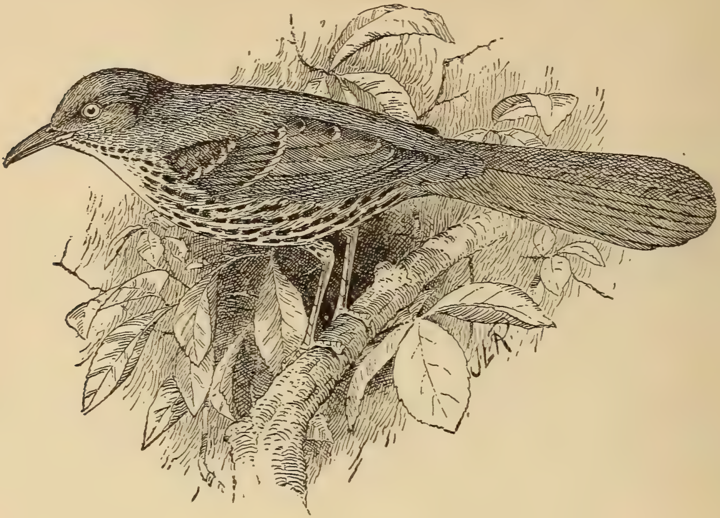

FIG. 39.—Brown thrasher.

The house wren (*Troglodytes aëdon*, fig. 40) takes no vegetable food. Twenty stomachs were collected from May to August, inclusive. They showed the food to have been distributed as follows: Grasshoppers and crickets, 27 percent; moths, cutworms, measuring worms, and allied

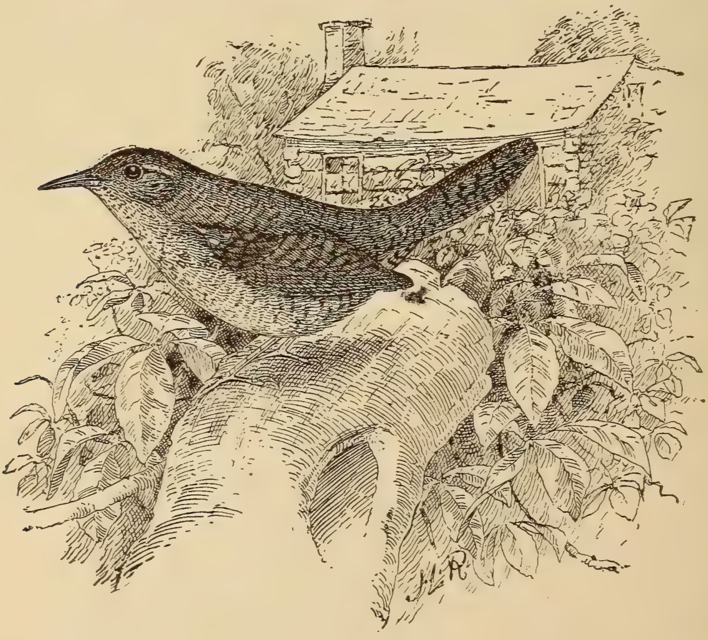

FIG. 40.—House wren.

larvæ, 19 percent; beetles, 11 percent, including Carabidæ, Cerambycidæ, Tenebrionidæ, Elateridæ (*Drasterius*), Scarabæidæ (*Aphodius*), Rhynchophora, and Chrysomelidæ (*Systena elongata*, etc.); bugs (true bugs—including *Myodocha serripes*—and a few leaf-hoppers), 9 percent; ants, 8 percent; May-flies, 2 percent; miscellaneous insects, 2 percent; spiders, 21 percent; and snails, 1 percent.

The winter wren (*Olbiorchilus hiemalis*) was observed hunting for insects and spiders in brush piles, but no stomachs were collected.

The long-billed marsh wren (*Cistothorus palustris*), though like the house wren it eats nothing but insects, can not be expected to help crops because of the remoteness of its marshy habitat. Five birds were collected. Spiders and beetles (*Calandra oryza*, *Donacia*, *Hippodamia maculata*) formed the major part of their food. The minor part was composed of true bugs, leaf-hoppers, flies, parasitic wasps, and ants.

One Carolina wren (*Thryothorus ludovicianus*) was collected. It had eaten caterpillars, grasshoppers, and beetles (longicorns and leaf-beetles, including *Odontota dorsalis*).

CREEPERS AND NUTHATCHES.

The brown creeper (*Certhia familiaris americana*) plays a useful part in ridding tree trunks of insect vermin. One stomach was taken. It contained such beetles as *Helops æreus* and *Bruchus hibisci*, saw-flies, flying ants, spiders, and seeds of the scrub pine.

Two other beneficent gleaners of tree-trunk insects are the nuthatches (*Sitta carolinensis* and *Sitta canadensis*). Both were observed at Marshall Hall, but no specimens were collected. Prof. E. Dwight Sanderson has shown that the white-bellied nuthatch feeds on both seeds and insects. He found it eating ragweed and sunflower seeds, corn, and a very small amount of mast. His observations show it to be very fond of bugs and their eggs, and that it selects most often such Tingitidæ as *Piesma cinerea*, Reduviidæ, Coreidæ, and Jassidæ. Its beetle food includes Carabidæ, Elateridae, Scarabæidæ, and Buprestidæ. Ants (Myrmicidæ) are taken in large numbers. It also catches some parasitic wasps (Braconidæ) and frequently secures stone-flies, dragon-flies, and true flies.[a]

TITMICE.

One tufted titmouse (*Parus bicolor*) was collected July 9, 1898. It had eaten several blueberries, a longicorn beetle, and a large cutworm.

Seven Carolina chickadees (*Parus carolinensis*) were taken during February, April, July, and August. Vegetable matter—mulberry seeds, pine seeds, and ragweed seeds—was present in four stomachs. All the birds had eaten insects. One had eaten 1 bee (Andrenidæ), 2 ants, 3 insect eggs, 3 spiders, and 3 caterpillars (measuring worms, Geometridæ and hairy Arctiidæ, which are usually avoided by birds). One of the stomachs examined contained katydid eggs and two others eggs of the wheel-bug. Between 200 and 300 eggs of the fall cankerworm have been found in the stomach of a black-capped chickadee and 450 eggs of a plant-louse in that of another. The eating of insect eggs is a characteristic habit of the chickadee, and makes the bird, small as it is, one of the most effective destroyers of insect pests. It is of particular value in the orchard, and every horticulturist would do well to encourage it.

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[a] Auk, Vol. XV, pp. 144–148, 1898.

KINGLETS.

The golden-crowned kinglet (*Regulus satrapa*) and the ruby-crowned kinglet (*Regulus calendula*) are useful insectivorous midgets. They were observed at Marshall Hall, but were not killed.

GNATCATCHERS.

Three blue-gray gnatcatchers (*Polioptila cærulea*) were collected. They had eaten longicorn beetles, joint-worm flies, caddis-flies, and several minute flies (unindentified Diptera).

THRUSHES.

The wood thrush (*Hylocichla mustelina*), Wilson thrush (*Hylocichla fuscescens*), hermit thrush (*Hylocichla guttata pallasi*), gray-cheeked thrush (*Hylocichla aliciæ*), and olive-backed thrush (*Hylocichla ustulata swainsoni*) were noted at Marshall Hall—the first as a breeding bird, the last four as migrants.

Three stomachs of the gray-cheeked thrush were taken May 15, 1900. They contained saw-fly larvæ, ants, caterpillars, May-flies, ground-beetles, weevils, and scarabæid beetles (*Anomala*, *Atænius*, *Lachnosterna*, and *Serica*).

Two olive-backed thrushes, also collected in May, had eaten ants (*Camponotus pennsylvanicus*), wasps (*Tiphia inornata*), ground-beetles, darkling-beetles (*Helops*), and ground-spiders (Lycosidæ).

The robin (*Merula migratoria*, fig. 41) is seen on the farm only during the colder half of the year. One bird collected in the blizzard of the third week of February, 1900, had fed on smilax berries. Field observations and the examination of stomachs collected elsewhere show that somewhat more than half of the robin's food is fruit. That which it takes at Marshall Hall, however, consists merely of wild berries. In the second week of April, 1899, 8 birds were collected. Five had eaten ground-beetles, and four, secured in a field that was being plowed, had taken large quantities of the larvæ of the ground-beetle, *Harpalus caliginosus*, which as before stated has lately been found harmful to strawberries. The other beetles eaten were darkling-beetles (*Opatrinus*), and two clover weevils (*Sitones hispidulus* and *Phytonomus punctatus*). One robin had fed on the pupa of a dipterous insect and two had picked up cocoons of a tineid moth. Several had destroyed cutworms and army worms. Two had eaten 6 cutworms apiece.

The robin is abundant and is most useful. It is the scourge of the insects that infest the open cultivated fields of the farm. Unfortunately it usually gets little credit for its virtues, is outlawed for vices that it does not possess, and is shot in large numbers for food.

Bluebirds (*Sialia sialis*, Pl. XVII, fig. 1) breed but sparingly at Marshall Hall on account of the persecutions of the English sparrow. By twenties and thirties they visit the farm in spring, autumn, and even winter. Two birds were taken February 20, 1900, and five on the 19th of the previous November. Six of these had eaten fruit, which constituted rather more than half of all the food. It was composed of the berries of bittersweet, woodbine, cedar, sumac, and poison ivy. One had eaten 8 poison ivy berries and 25 cedar berries—apparently a pretty large dose of stimulating drugs. All had eaten insects. Their selection had fallen on such highly flavored species as ground-beetles (*Harpalus*), stink bugs (Pentatomidæ), and other bugs, including *Alydus pilosulus*. One had eaten a dung-beetle (*Aphodius*). Grasshoppers and crickets had also entered into their fare. Caterpillars, including bristly Arctiidæ and cutworms, had been the prey of all. It is a pleasant duty to report that this bird, so popular throughout the land, is, through its excellent work as a destroyer of noxious insects, well worthy the protection and encouragement it

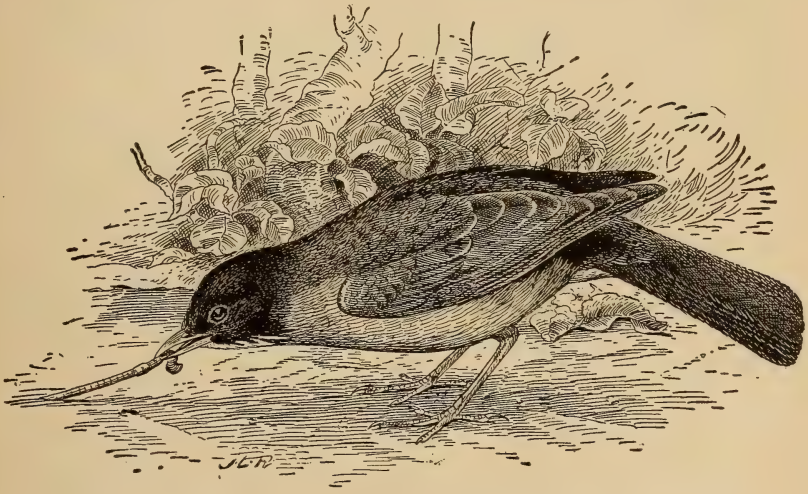

FIG. 41.—Robin.

receives. Bluebirds no longer nest on the Bryan farm, though a few pairs with their broods enter it during the summer to feed. But they were abundant there until ousted by the English sparrows, and nested all about the place. A characteristic nesting spot in an old stump on the front lawn of the house is shown in Pl. XVII, fig. 2. One of the most serious charges that can be brought against the English sparrow is the usurpation of the dooryard homes of these beautiful, gentle, and highly useful birds.

VIII.—SUMMARY.

The following conclusions are drawn solely with reference to the relationship of birds to the farmers at Marshall Hall; and while to a certain extent they indicate the general relationship of birds to agricultural interests, yet special conditions, of these particular farms as well as any others, sometimes have a modifying influence that must be taken into account.

At Marshall Hall the English sparrow, the sharpshinned and Cooper hawks, and the great horned owl are, as everywhere, inimical to the farmers' interests and should be killed at every opportunity. The sapsucker punctures orchard trees extensively and should be shot. The study of the crow is unfavorable in results so far as these particular farms are concerned, partly because of special conditions. Its work in removing carrion and destroying insects is serviceable, but it does so much damage to game, poultry, fruit, and grain that it more than counterbalances this good and should be reduced in numbers. The crow blackbird appears to be purely beneficial to these farms during the breeding season and feeds extensively on weed seed during migration, but at the latter time it is very injurious to grain. More detailed observations are necessary to determine its proper status at Marshall Hall.

The remaining species probably do more good than harm, and except under unusual conditions should receive encouragement by the owners of the farms. Certain species, such as flycatchers, swallows, and warblers, prey to some extent upon useful parasitic insects, but on the whole the habits of these insectivorous birds are productive of considerable good. Together with the vireos, cuckoos, and woodpeckers (exclusive of the sapsuckers), they are the most valuable conservators of foliage on the farms. The quail, meadowlark, orchard oriole, mockingbird, house wren, grasshopper sparrow, and chipping sparrow feed on insects of the cultivated fields, particularly during the breeding season, when the nestlings of practically all species eat enormous numbers of caterpillars and grasshoppers.

The most evident service is the wholesale destruction of weed seed. Even if birds were useful in no other way, their preservation would still be desirable, since in destroying large quantities of weed seed they array themselves on the side of the Marshall Hall farmer against invaders that dispute with him, inch by inch, the possession of his fields. The most active weed destroyers are the quail, dove, cowbird, red-winged blackbird, meadowlark, and a dozen species of native sparrows. The utility of these species in destroying weed seed is probably at least as great wherever the birds may be found as investigation has shown it to be at Marshall Hall.

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U. S. DEPARTMENT OF AGRICULTURE.

DIVISION OF BIOLOGICAL SURVEY—BULLETIN No. 18.

C. HART MERRIAM, *Chief.*

DISTRIBUTION AND MIGRATION

OF

NORTH AMERICAN WARBLERS.

BY

WELLS W. COOKE,

ASSISTANT, BIOLOGICAL SURVEY.

1862 1889

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Biological Survey,
Washington, D. C., August 1, 1904.

Sir: I have the honor to transmit herewith for publication as Bulletin No. 18 of the Biological Survey a report on the Distribution and Migration of North American Warblers, by Wells W. Cooke, an assistant in the Survey.

Respectfully,

C. Hart Merriam,
Chief, Biological Survey.

Hon. James Wilson,
Secretary of Agriculture.

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DISTRIBUTION AND MIGRATION OF NORTH AMERICAN WARBLERS.

INTRODUCTION.

The warblers are birds of wide distribution. They occur in summer in greater or less abundance over nearly the whole of North America except the arid lands of the Southwest and the Barren Grounds of the far North. Though of small size they are brightly colored, and during the migrations they come in such numbers, both of species and individuals, that they often form the most conspicuous part of a bird wave, and their return is awaited with eagerness by students of migration. In spring the lover of the beautiful finds among them brilliant colors in multiple variety; the practiced ear is taxed to distinguish their faint songs dropping from the tree tops; and the experienced ornithologist feels a pleasurable excitement in scanning each individual of the passing host as he seeks the rarity that will more than repay the time spent in the search. In the fall, when the same bands in less conspicuous garb return with the season's offspring, even the skilled observer finds himself perplexed to identify every species as it passes—singly, by twos and threes, in restless flocks, or in the swarming numbers of the bird wave.

The family of warblers is a large one, its members in the United States numbering over seventy species and subspecies. These, in the distances they travel in migration and in the size of the areas they occupy during the breeding season, present an enormous range of variation. Some, as the yellow warbler (*Dendroica æstiva*) and the yellow-breasted chat (*Icteria virens*), breed over the greater part of the United States, excepting the arid areas, and make long flights in migration; while others, as the Belding yellowthroat (*Geothlypis beldingi*), are restricted to areas only a few square miles in extent, where they remain the year around. Among the birds that perform regular migrations are some that go only a few miles, as the Florida yellowthroats (*Geothlypis trichas ignota*), that cross back and forth between Cuba and the Gulf States, and others that travel many thousands of miles, as the black-poll warblers (*Dendroica striata*) that nest in Alaska and northern Canada and spend the winter in South America, from Brazil to Chile. From the foregoing it is obvious that the size of the area occupied in winter varies enormously—thus, at this season the Swainson warbler (*Helinaia swainsoni*) is restricted to the island of Jamaica, while the yellow warbler (*Dendroica æstiva* and its subspecies) is distributed from western Mexico to French Guiana.

ROUTES OF MIGRATION.

In passing between the United States and their winter homes, warblers use all the routes followed by other species of birds. The belief of the writer is that when birds begin to migrate in the fall, their path of migration is the full width of the breeding range, but that owing to the conformation of the North American continent, the lines of flight taken by individual birds necessarily converge so that as a species proceeds southward, the width of the region occupied by it becomes less. The kingbird (*Tyrannus tyrannus*) affords a more striking example of this than can be found among the warblers. Its summer home—from Newfoundland to British Columbia—has a width of 2,800 miles; its paths of migration converge until in the southern United States from southern Florida to the mouth of the Rio Grande their total width is 900 miles. Continuing southward, the eastern edge of this path or belt appears to extend from southern Florida to Yucatan, but the western edge is less sharply defined; few individuals of the species seem to travel west of a line drawn from Corpus Christi to Tabasco. Thus in the latitude of southern Yucatan the migration path is scarcely 400 miles wide, and the great bulk of the species probably move in a belt less than half this width.

When the warblers pass beyond the southern boundary of the United States, the width and destination of their paths of migration vary greatly among the different species. Some go to the Bahamas and not to Cuba, others to Cuba and not to Yucatan, or to Yucatan and not to Cuba. In the case of wide-ranging species, like the black and white warbler or the redstart, it is probable that some individuals cross from northern Florida to the northern Bahamas, others from central Florida to the central or southern Bahamas, others from southern Florida to Cuba, others from northwestern Florida to Yucatan, and still others from points to the west of these localities. These different lines of flight between the southern boundary of the United States and the countries to the south are called in this publication migration routes, but they are not to be considered definite paths with exact boundaries, but merely minor subdivisions of a great migration route that pass insensibly into each other. The principal subdivisions, or routes, are the following:

1. United States to the Bahamas.
2. Florida to Cuba.
3. Western Florida to Yucatan.
4. Northern coast of the Gulf of Mexico southward.
5. Texas to Mexico by land.
6. Western United States to Mexico.

In the lists that follow the species known to use each of the principal migration routes are mentioned. The mention of a species, however, must not be understood as meaning all the individuals of that species, but only a greater or smaller number. In each case it is probable that species other than those enumerated make use of the same route, but records are lacking.

UNITED STATES TO THE BAHAMAS.

Some individuals of the following species migrate from the United States to the Bahamas, and find their farthest extension either in the West Indies (at the points mentioned below), on the island of Trinidad, or on the mainland of South America:

Black and white warbler (*Mniotilta varia*). Guadeloupe (Leeward Islands).
Worm-eating warbler (*Helmitheros vermivorus*). Great Inagua (Bahamas).
Parula warbler (*Compsothlypis americana*). Barbados (Windward Islands).
Cape May warbler (*Dendroica tigrina*). Tobago.
Black-throated blue warbler (*Dendroica cærulescens*). Haiti.
Myrtle warbler (*Dendroica coronata*). Porto Rico.
Black-poll warbler (*Dendroica striata*). Trinidad.
Yellow-throated warbler (*Dendroica dominica*). Porto Rico.
Kirtland warbler (*Dendroica kirtlandi*). Caicos (Bahamas).
Palm warbler (*Dendroica palmarum*). Porto Rico.
Prairie warbler (*Dendroica discolor*). St. Christopher (Leeward Islands).
Oven-bird (*Seiurus aurocapillus*). St. Croix (Leeward Islands).
Water-thrush (*Seiurus noveboracensis*). Trinidad.
Louisiana water-thrush (*Seiurus motacilla*). Antigua (Leeward Islands).
Connecticut warbler (*Geothlypis agilis*). Bahamas; Brazil; Colombia.
Maryland yellow-throat (*Geothlypis trichas*). North Bahamas.
Northern yellow-throat (*Geothlypis trichas brachidactyla*). Bahamas.
Redstart (*Setophaga ruticilla*). Trinidad.

Land birds do not use the line of the West Indies from the Bahamas eastward as their common route of migration between the United States and South America. Some 37 species of these, including 18 warblers, cross from Florida to the Bahamas, and about 18 of them, 12 being warblers, continue east to Porto Rico, while only 6 are known to pass to the Windward Islands, Trinidad, and South America. On the other hand, about 50 species of land birds migrate from the eastern United States to South America without being known to enter the Lesser Antilles.

FLORIDA TO CUBA.

The best known route is between Florida and Cuba. It is regularly used by individuals of the following species:

Black and white warbler (*Mniotilta varia*).
Swainson warbler (*Helinaia swainsoni*). To Jamaica
Worm-eating warbler (*Helmitheros vermivorus*).
Bachman warbler (*Helminthophila bachmani*).
Parula warbler (*Compsothlypis americana*).
Cape May warbler (*Dendroica tigrina*).

Black-throated blue warbler (*Dendroica cærulescens*).
Myrtle warbler (*Dendroica coronata*).
Black-poll warbler (*Dendroica striata*).
Yellow-throated warbler (*Dendroica dominica*).
Palm warbler (*Dendroica palmarum*).
Prairie warbler (*Dendroica discolor*).
Oven-bird (*Seiurus aurocapillus*).
Water-thrush (*Seiurus noveboracensis*).
Louisiana water-thrush (*Seiurus motacilla*).
Florida yellow-throat (*Geothlypis trichas ignota*).
Northern yellow-throat (*Geothlypis trichas brachidactyla*).
Redstart (*Setophaga ruticilla*).

WESTERN FLORIDA TO YUCATAN.

The next migration route to the westward is from western Florida to Yucatan directly, without touching southern Florida or Cuba. This route is used by individuals of the—

Yellow warbler (*Dendroica æstiva*).
Magnolia warbler (*Dendroica maculosa*).
Black-throated green warbler (*Dendroica virens*).
Hooded warbler (*Wilsonia mitrata*).

It is also probably used to a greater or less extent by many other species, but this can not at present be proved.

NORTHERN COAST OF THE GULF OF MEXICO SOUTHWARD.

Many species leave the United States along the coast from western Florida to the region about Galveston, Tex., and fly across the Gulf of Mexico.

This route is used by individuals of the following species:

Black and white warbler (*Mniotilta varia*).
Prothonotary warbler (*Protonotaria citrea*).
Worm-eating warbler (*Helmitheros vermivorus*).
Golden-winged warbler (*Helminthophila chrysoptera*).
Parula warbler (*Compsothlypis americana*).
Yellow warbler (*Dendroica æstiva*).
Magnolia warbler (*Dendroica maculosa*).
Cerulean warbler (*Dendroica cerulea*).
Chestnut-sided warbler (*Dendroica pensylvanica*).
Bay-breasted warbler (*Dendroica castanea*).
Blackburnian warbler (*Dendroica blackburniæ*).
Black-throated green warbler (*Dendroica virens*).
Oven-bird (*Seiurus aurocapillus*).
Water-thrush (*Seiurus noveboracensis*).
Kentucky warbler (*Geothlypis formosa*).
Mourning warbler (*Geothlypis philadelphia*).
Yellow-breasted chat (*Icteria virens*).
Hooded warbler (*Wilsonia mitrata*).
Canadian warbler (*Wilsonia canadensis*).
Redstart (*Setophaga ruticilla*).

TEXAS TO MEXICO BY LAND.

Some individuals of the following species enter eastern Mexico by land from Texas. With one exception they represent species whose winter home is more commonly reached by a flight across the Gulf of Mexico. The exception is the orange-crowned warbler (*Helminthophila celata*) which seems to avoid a water trip and to go entirely by land to Mexico.

Black and white warbler (*Mniotilta varia*).
Blue-winged warbler (*Helminthophila pinus*).
Nashville warbler (*Helminthophila rubricapilla*).
Orange-crowned warbler (*Helminthophila celata*).
Tennessee warbler (*Helminthophila peregrina*).
Parula warbler (*Compsothlypis americana*).
Yellow warbler (*Dendroica æstiva*).
Myrtle warbler (*Dendroica coronata*).
Magnolia warbler (*Dendroica maculosa*).
Chestnut-sided warbler (*Dendroica pensylvanica*).
Blackburnian warbler (*Dendroica blackburniæ*).
Sycamore warbler (*Dendroica dominica albilora*).
Black-throated green warbler (*Dendroica virens*).
Oven-bird (*Seiurus aurocapillus*).
Water-thrush (*Seiurus noveboracensis*).
Louisiana water-thrush (*Seiurus motacilla*).
Northern yellow-throat (*Geothlypis trichas brachidactyla*).
Western yellow-throat (*Geothlypis trichas occidentalis*).
Yellow-breasted chat (*Icteria virens*).
Hooded warbler (*Wilsonia mitrata*).
Wilson warbler (*Wilsonia pusilla*).
Canadian warbler (*Wilsonia canadensis*).
Redstart (*Setophaga ruticilla*).

Of the species just given, a few show a tendency to migrate farther west than the others. In general it may be said that the winter range is seldom west of the breeding range. The principal direction of migration is of course south, and those individuals that have a choice of moving to the east or to the west of south almost always proceed eastward. An exception to this rule is found in the case of the following species, which extend in western Mexico to the localities mentioned:

Black and white warbler (*Mniotilta varia*).	Mazatlan.
Sycamore warbler (*Dendroica dominica albilora*).	Tepic.
Oven-bird (*Seiurus aurocapillus*).	Mazatlan.
Louisiana water-thrush (*Seiurus motacilla*).	Mazatlan.

It is noteworthy in this connection that two of these, the black and white warbler and the oven-bird, have been taken as rare visitors to the Rocky Mountains; and it is possible that it is these western stragglers that winter in western Mexico.

WESTERN MIGRATION ROUTE TO MEXICO.

The westernmost part of the great migration route between the United States and the countries to the south is used by the following species that migrate by land to Mexico:

Lucy warbler (*Helminthophila luciæ*).
Virginia warbler (*Helminthophila virginiæ*).
Calaveras warbler (*Helminthophila rubricapilla gutturalis*).
Lutescent warbler (*Helminthophila celata lutescens*).
Sennett warbler (*Compsothlypis pitiayumi nigrilora*).
Olive warbler (*Dendroica olivacea*).
Sonora yellow warbler (*Dendroica æstiva sonorana*).
Alaska yellow warbler (*Dendroica æstiva rubiginosa*).
Audubon warbler (*Dendroica auduboni*).
Black-fronted warbler (*Dendroica auduboni nigrifrons*).
Grace warbler (*Dendroica graciæ*).
Black-throated gray warbler (*Dendroica nigrescens*).
Golden-cheeked warbler (*Dendroica chrysoparia*).
Pacific yellow-throat (*Geothlypis trichas arizela*).
Townsend warbler (*Dendroica townsendi*).
Hermit warbler (*Dendroica occidentalis*).
Grinnell water-thrush (*Seiurus noveboracensis notabilis*).
Macgillivray warbler (*Geothlypis tolmiei*).
Western yellow-throat (*Geothlypis trichas occidentalis*).
Rio Grande yellow-throat (*Geothlypis poliocephala*).
Long-tailed chat (*Icteria virens longicauda*).
Pileolated warbler (*Wilsonia pusilla pileolata*).
Golden pileolated warbler (*Wilsonia pusilla chryseola*).
Painted redstart (*Setophaga picta*).
Red-faced warbler (*Cardellina rubrifrons*).

The lines of migration so far given cover the principal routes by which the birds of the United States reach their winter quarters. There is another route which can not be mapped owing to lack of data. Indeed, its existence is largely inferential. Several species that occur in the Mississippi Valley and the Allegheny Mountains reach Middle America in winter, but are not known regularly in migration in Florida, Cuba, Yucatan, or northeastern Mexico. It is thus certain that these species pass from the Mississippi Valley and the Allegheny Mountains to Middle America, but the point of departure from the United States and the point of arrival in Middle America are not yet known. It seems probable that the birds cross directly to the heavy, damp forests that cover the lowlands of eastern Honduras, the southern parts of Yucatan and Campeche, and the highlands of northwestern Guatemala, but not until this region, as yet unvisited during the fall migration, has been thoroughly explored, can any exact knowledge on the point be obtained. Species that appear largely to use this route are the following:

Blue-winged warbler (*Helminthophila pinus*).
Nashville warbler (*Helminthophila rubricapilla*).
Tennessee warbler (*Helminthophila peregrina*).
Wilson warbler (*Wilsonia pusilla*).

It is probable also that this route is used by many individuals of the following species:

Cerulean warbler (*Dendroica cerulea*).
Chestnut-sided warbler (*Dendroica pensylvanica*).
Blackburnian warbler (*Dendroica blackburniæ*).
Mourning warbler (*Geothlypis philadelphia*).

It seems probable that not all birds in their migrations north across the Gulf of Mexico alight as soon as they reach the coast of the United States. How far they penetrate into the interior before they descend is not known, but the latitude reached probably approximates the northern edge of the Gulf strip of the Austroriparian life zone—that is, slightly north of the latitude of the northern boundary of Florida. More or less strong reasons exist for believing that some individuals of each of the following species sometimes fly inland before alighting:

Black and white warbler (*Mniotilta varia*).
Nashville warbler (*Helminthophila rubricapilla*).
Yellow warbler (*Dendroica æstiva*).
Magnolia warbler (*Dendroica maculosa*).
Cerulean warbler (*Dendroica cerulea*).
Chestnut-sided warbler *Dendroica pensylvanica*).
Bay-breasted warbler (*Dendroica castanea*).
Blackburnian warbler (*Dendroica blackburniæ*).
Mourning warbler (*Geothlypis philadelphia*).
Yellow-breasted chat (*Icteria virens*).
Wilson warbler (*Wilsonia pusilla*).
Redstart (*Setophaga ruticilla*).

OCCASIONAL ROUTES TO OR THROUGH CUBA OR YUCATAN.

Mention should be made of two other possible routes that have not yet been noticed—one from Cuba to Yucatan, the other from Cuba to South America. It is undoubtedly true that certain day-migrants (the swallows, for instance) cross between Cuba and Yucatan, but of the night-migrants, such as the warblers, there seems at present no proof that any use this as a regular path of migration. The fact that a comparatively small number of species of warblers are found as regular visitors to both Cuba and Yucatan would create a presumption against this route being much used, while some of the warblers certainly do not follow it. The three following lists make these points clearer.

SPECIES THAT OCCUR REGULARLY IN BOTH CUBA AND YUCATAN.

Black and white warbler (*Mniotilta varia*).
Parula warbler (*Compsothlypis americana*).

Myrtle warbler (*Dendroica coronata*).
Oven-bird (*Seiurus aurocapillus*).
Water-thrush (*Seiurus noveboracensis*).
Louisiana water-thrush (*Seiurus motacilla*).
Northern yellow-throat (*Geothlypis trichas brachidactyla*).
Redstart (*Setophaga ruticilla*).

SPECIES THAT OCCUR REGULARLY IN CUBA BUT NOT IN YUCATAN.

Bachman warbler (*Helminthophila bachmani*).
Black-throated blue warbler (*Dendroica cærulescens*). Yucatan once.
Black-poll warbler (*Dendroica striata*).
Yellow-throated warbler (*Dendroica dominica*).

SPECIES THAT OCCUR REGULARLY IN YUCATAN BUT NOT IN CUBA.

Prothonotary warbler (*Protonotaria citrea*).
Yellow warbler (*Dendroica æstiva*).
Magnolia warbler (*Dendroica maculosa*).
Blackburnian warbler (*Dendroica blackburniæ*).
Sycamore warbler (*Dendroica dominica albilora*).
Black-throated green warbler (*Dendroica virens*).
Hooded warbler (*Wilsonia mitrata*).

Not enough data have been accumulated to permit any exact statement as to the species of warblers, if any, that cross from Cuba to South America. It is known that some other birds, as the bobolink (*Dolichonyx oryzivorus*) and Florida kingbird (*Tyrannus dominicensis*), pass over this route in large numbers. That warblers seldom cross the Caribbean Sea is probable from the fact that of nearly a score of species that occur in the eastern United States and also in South America, only the following 6 occur regularly in Cuba.

SPECIES THAT OCCUR IN BOTH CUBA AND SOUTH AMERICA.

Black and white warbler (*Mniotilta varia*).
Black-poll warbler (*Dendroica striata*).
Oven-bird (*Seiurus aurocapillus*).
Water-thrush (*Seiurus noveboracensis*).
Louisiana water-thrush (*Seiurus motacilla*).
Redstart (*Setophaga ruticilla*).

SOUTHERNMOST EXTENSION OF WINTER RANGES OF WARBLERS OF EASTERN NORTH AMERICA.

The following tables show the southernmost limits at which the various species of eastern warblers have been recorded in winter.

SPECIES THAT RANGE TO THE MAINLAND OF SOUTH AMERICA.

Black and white warbler (*Mniotilta varia.*)	Colombia, Venezuela, Ecuador.
Prothonotary warbler (*Protonotaria citrea*).	Colombia, Venezuela.
Blue-winged warbler (*Helminthophila pinus*).	Colombia—one accidental occurrence.
Golden-winged warbler (*Helminthophila chrysoptera*).	Colombia.

Tennessee warbler (*Helminthophila peregrina*). Colombia, Venezuela.

Yellow warbler (*Dendroica æstiva*). Colombia, Venezuela, British, Dutch, and French Guiana, Brazil, Ecuador, Peru.

Black-throated blue warbler (*Dendroica cærulescens*). Colombia; one accidental occurrence.

Cerulean warbler (*Dendroica cerulea*). Colombia, Ecuador, Peru, Bolivia.

Bay-breasted warbler (*Dendroica castanea*). Colombia.

Black-poll warbler (*Dendroica striata*). Colombia, Venezuela, British Guiana, French Guiana, Brazil, Peru, Chile, Ecuador.

Blackburnian warbler (*Dendroica blackburniæ*). Colombia, Venezuela, Ecuador, Peru.

Oven-bird (*Seiurus aurocapillus*). Colombia—rare.

Water-thrush (*Seiurus noveboracensis*). British Guiana, Venezuela, Colombia.

Grinnell water-thrush (*Seiurus noveboracensis notabilis*). Colombia.

Louisiana water-thrush (*Seiurus motacilla*). Colombia—rare.

Kentucky warbler (*Geothlypis formosa*). Colombia.

Connecticut warbler (*Geothlypis agilis*). Colombia, Brazil.

Mourning warbler (*Geothlypis philadelphia*). Colombia, Ecuador.

Canadian warbler (*Wilsonia canadensis*). Colombia, Ecuador, Peru.

Redstart (*Setophaga ruticilla*). Colombia, Venezuela, Ecuador, British Guiana.

SPECIES KNOWN TO RANGE TO BUT NOT BEYOND PANAMA.

Worm-eating warbler (*Helmitheros vermivorus*).

Myrtle warbler (*Dendroica coronata*).

Magnolia warbler (*Dendroica maculosa*).

Chestnut-sided warbler (*Dendroica pensylvanica*).

Black-throated green warbler (*Dendroica virens*).

Northern yellow-throat (*Geothlypis trichas brachidactyla*).

Hooded warbler (*Wilsonia mitrata*).

SPECIES THAT ENTER MEXICO AND CENTRAL AMERICA BUT ARE NOT KNOWN TO REACH PANAMA.

Blue-winged warbler (*Helminthophila pinus*). Nicaragua; one accidental occurrence in Colombia.

Nashville warbler (*Helminthophila rubricapilla*). Mexico. Guatemala—straggler.

Orange-crowned warbler (*Helminthophila celata*). Mexico.

Parula warbler (*Compsothlypis americana*). Nicaragua.

Black-throated blue warbler (*Dendroica cærulescens*). Guatemala—one accidental occurrence.

Sycamore warbler (*Dendroica dominica albilora*). Costa Rica.

Palm warbler (*Dendroica palmarum*). Yucatan.

Yellow-breasted chat (*Icteria virens*). Costa Rica.

Wilson warbler (*Wilsonia pusilla*). Costa Rica.

SPECIES THAT DO NOT REGULARLY WINTER ON THE MAINLAND SOUTH OF THE UNITED STATES, BUT REMAIN IN THE SOUTHERN STATES OR THE WEST INDIES.

Swainson warbler (*Helinaia swainsoni*). Jamaica. Accidental in Mexico—one record.

Bachman warbler (*Helminthophila bachmani*). Cuba.

Cape May warbler (*Dendroica tigrina*). West Indies. Key West—rare or accidental. Accidental in Yucatan—one record.

Black-throated blue warbler (*Dendroica cærulescens*). West Indies. Key West—sometimes not uncommon. Accidental in Guatemala and Colombia.

Yellow-throated warbler (*Dendroica dominica*). West Indies. Florida and locally along coast to South Carolina. Accidental in Yucatan—one record.

Kirtland warbler (*Dendroica kirtlandi*). Bahamas.

Pine warbler (*Dendroica vigorsii*).[a] United States north to Virginia, Illinois, etc. Accidental in Mexico; one record.

Yellow palm warbler (*Dendroica palmarum hypochrysea*). United States. Accidental in Cuba and Jamaica.

Prairie warbler (*Dendroica discolor*). West Indies and other islands.

Maryland yellow-throat (*Geothlypis trichas*). United States and Bahamas.

Florida yellow-throat (*Geothlypis trichas ignota*). United States and Cuba.

SYSTEMATIC REPORT.

The present paper is devoted to a systematic account of the distribution and migration of the North American warblers, numbering 59 species and 19 subspecies. In each case the breeding range is given first, then the winter range, followed by a synopsis of the time of spring migration and of fall migration. Bibliographical references relating to the occurrence of the various species in South America are given in full. For the purposes of this article 'North America' includes the mainland north of Mexico and also the peninsula of Lower California, as in the Check-List of the American Ornithologists' Union; and 'West Indies' includes all the islands commonly known under that name, except Tobago and Trinidad, near the coast of South America. The name of each species is preceded by its number in the above-mentioned Check-List. Most interest attaches to the movements of the warblers of the eastern part of the United States that pass by flight over water to their winter homes. These, therefore, receive full treatment, while less is said of the migration of the western species that make the journey from the United States to Mexico and southward entirely by land. Special attention has been paid to the definition of the southern limit of the breeding range of each species—a subject that for many years has received the careful consideration of the Biological Survey. So far as known to the writer, the present paper is the first attempt to define exactly the northern limit of the winter range of each species, and also to indicate the altitudinal range of the same in its winter home.

The report is based largely on records received by the Biological Survey from land stations and lighthouses, together with records from countries south of the United States, especially Costa Rica,

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[a] The pine warbler of the Bahamas has lately been separated as subspecies *achrustera;* the regular winter habitat of *vigorsii* is therefore entirely within the United States, this being the only case of an eastern warbler confined to this country during the winter.

Nicaragua, and Mexico. The systematic migration records of Mr. George K. Cherrie, for two years at San José, Costa Rica, and of Dr. C. W. Richmond, for a year in southeastern Nicaragua, have been of great service and value. The field parties of the Biological Survey which have worked for twelve years in Mexico have obtained a large amount of excellent data of extreme usefulness in determining questions of winter distribution and migration. But while much has been done, some notable deficiencies exist. No observer has been along the coast of northwestern Florida during the fall migration and records of spring migration in this locality are deplorably lacking. While Yucatan has been well studied in winter and spring, almost no notes have been made on the north coast or on the islands off the east coast during the period from July until late in the fall. Consequently the beginning of fall migration in this country is unreported. Scarcely any birds have been collected in Guatemala southeast of the towns of Duenas and Retalhuleu, or during the migration season in any of the highlands of Honduras and Nicaragua. Hence little or nothing is known of the movements of birds through these countries, except by inference from data collected in Costa Rica and Mexico. In the greater part of Guatemala practically no field work has been done in the last twenty-five years.

In 1888 this office published a bulletin entitled Bird Migration in the Mississippi Valley,[a] by W. W. Cooke, containing the results of an effort to trace and time the birds during the spring and fall migrations of 1884 and 1885 from the Gulf of Mexico to Manitoba. In the northern half of this area the number of observers was sufficient to afford a fairly approximate knowledge of the movements of species. But south of St. Louis there were few records, and scarcely any of the arrival of birds on the north coast of the Gulf of Mexico. During the period that has elapsed since the bulletin was written, the Biological Survey has collected from all parts of North America a vast store of material on bird migration, and has been especially fortunate in the completeness of some of the records secured from the South. The largest single addition to the knowledge of movements of birds along the southern border of the United States is due to records of species striking the lighthouses off the south coast of Florida. Several thousands of these instances have been recorded. They furnish the best available data so far collected on the length of the migrating season, and afford also much-needed information concerning the time when many species of birds begin their migration in the fall. The keeper of the lighthouse at Sombrero Key, in particular, has taken much interest in the matter, and has spent many hours counting and identifying birds, either killed by flying against the glass protecting the light or resting bewildered on the balcony after striking. Eight hundred and sixteen records were received in five years from this one lighthouse. They comprise a total of 2,011 dead birds and 10,086 birds which struck the light with so little force that on the return of clear skies or daylight they were able to resume their flight. Warblers migrate chiefly by night and are so susceptible to the influence of a bright light that they constitute at least 80 percent of these thousands.

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[a] Bull. No. 2, Division of Economic Ornithology and Mammalogy, 1888.

The most valuable part of the present report is based on the migration schedules contributed to the Biological Survey during the past twenty years by voluntary observers throughout the Union. To each and all of these sincere thanks are hereby tendered.

636. **Mniotilta varia** (Linn.). Black and White Warbler.

Breeding range.—The southern limit of the principal breeding range of the black and white warbler is the southern boundary of the Carolinian life zone from North Carolina to Kansas. Records of the supposed breeding of the species in the Austroriparian zone in Texas, Louisiana, and northern Florida are quite numerous. Most of them, however, are based on records of young birds appearing so early in the summer that they were believed to have been reared in the immediate vicinity. The black and white warbler is, however, one of the very earliest of migrants. At the southern limit of its range it nests in April, giving the young abundant time to be strong-winged by early in July. It certainly does not breed in southern Florida, yet both adults and young of the year have been noted at Key West, Fla., by the middle of July, so that July dates in the Gulf States are not evidence of breeding. The breeding range extends north to New Brunswick, Nova Scotia, Newfoundland, Hudson Bay, and Fort Norman, Mackenzie; west regularly to central South Dakota, central Kansas, and central Texas, and casually to Lesser Slave Lake and Peace River Landing, Athabasca, Colorado (two breeding records), and California (three breeding records).

Winter range.—The black and white warbler has a limited range in South America, but is common in the Santa Marta region of northeastern Colombia—on the coast at Bonda,[a] and Santa Marta,[b] and in the mountains at Minca (2,000 feet),[c] Onaca (2,500 feet),[a] and Las Nubes (5,000 feet).[a] On the coast it is noted in the fall; in the mountains it occurs from December to March. Farther south it is recorded from Bucaramanga (3,000 feet),[d] from near there at Herradura (4,000 feet),[e] and from Bogota.[f] In the State of Antioquia it was taken at Concordia

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[a] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 178, 1900; Auk, XVII, 367, 1900.

[b] Bangs, Proc. Biol. Soc. Wash., XII, 143, 1898.

[c] Salvin and Godman, Ibis, p. 117, 1880.

[d] Berlepsch, J. f. Orn., p. 282, 1884.

[e] Wyatt, Ibis, p. 322, 1871.

[f] Sclater, Cat. Am. Birds, p. 26, 1862; P. Z. S., p. 143, 1855; Sharpe, Cat. Birds Brit. Mus., X, p. 253, 1885.

(6,000 feet),[a] and Sta. Elena (6,000 feet). These records carry the known range throughout the northern half of Colombia. The bird has also been recorded in the winter at Merida, Venezuela (5,400 feet),[b] and at Quito, Ecuador.[c] It is common in Panama up to 4,000 feet,[d] and at altitudes ranging from 1,500 to 4,000 feet in Costa Rica. It undoubtedly occurs during the winter on the higher lands of Honduras and Nicaragua, but apparently is not recorded from either country, probably because during this season observers have been only on the coast or at altitudes of less than a thousand feet in the interior. It has been taken in fall migration on Ruatan Island, off the coast of Honduras.[e] From northern Yucatan it ranges to the Pacific coast of Guatemala. It is found in winter on the islands[f] and mainland[g] of Yucatan and up to at least 7,000 feet in the mountains of Guatemala. In Mexico the distribution of the bird is extensive and peculiar. It is one of the few species from the eastern part of the United States that winter on the coast of western Mexico as far north as Colima and Mazatlan. The parties of the Biological Survey met it in nearly every part of Mexico visited, though under quite different conditions of altitude at different times of the year. In winter they took it on the coast in Colima and Guerrero, and up to 3,500 feet in Chiapas. They found it rather common below a thousand feet in Campeche, Tabasco, and in eastern Puebla, and less common from 1,000 to 3,500 feet. It winters as far north as Monterey, Nuevo Leon, and occasionally reaches southern Texas. In the early fall (August 18 to September 1) it has been found from 4,000 feet in Chiapas to a little above 10,000 feet in Oaxaca.

In the Bahamas the black and white warbler is recorded from the northern half of the group to Rum Cay.[h] It is a common winter resident of the Greater Antilles, and has been taken in the Lesser Antilles as far east as St. Croix, St. Eustatius,[i] and Guadeloupe.[j] It also winters in southern Florida, and rarely as far north as St. Augustine.

Spring migration.—The earliest records of spring migration of the black and white warbler are of birds striking the lighthouses of Alligator Reef and Sombrero Key, Florida, in the first week in March.

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[a] Sclater and Salvin, P. Z. S., p. 493, 1879.

[b] Sclater and Salvin, P. Z. S., p. 780, 1870. Ernst, Rev. Cient. Univ. Venez. I, 33, 1887; Flora & Fauna Venez., p. 301, 1877.

[c] Orton, Am. Nat., V, p. 623, 1871.

[d] Bangs, Proc. N. E. Zool. Club, III, p. 63, 1902.

[e] Ridgway, Proc. U. S. Nat. Mus., X, p. 578, 1888.

[f] Salvin, Ibis, p. 246, 1888.

[g] Boucard, P. Z. S., p. 440, 1883.

[h] Ridgway, Auk, VIII, p. 338, 1891.

[i] Cory, Auk, VIII, p. 447, 1891.

[j] Lawrence, Proc. U. S. Nat. Mus., VIII, p. 621, 1885.

The full records are: Alligator Reef, March 4, 1889; Sombrero Key, March 7, 1887, March 10, 1888, and March 3 and 11, 1889.

The average date of earliest arrival at Raleigh, N. C., from 1885 to 1899, inclusive, is March 27, with extremes of March 19, 1894, and April 1, 1885. At Statesville, directly west of Raleigh and but little higher, the average date of earliest arrival in 1885, 1887, and 1888 is also March 27. Corresponding records have been received from Chapel Hill, Greensboro, and the southern part of Bertie County, while near Asheville, N. C., in the mountains, at 2,000 feet, the average date of arrival for the five years 1890 to 1894 is April 3.

The statements of writers on the migration of this species through Florida, etc., may be thus summarized: Tarpon Springs, first arrival during the last part of March; Palatka, first arrival March 13, 1885—species common March 24; first arrival at Gainesville, March 15, 1887; at Pensacola, March 21, 1885; at Perdido Light, March 22, 1885; at Shelby, Ala., March 18, 1898; at Coosada, Ala., March 13, 1878; near Beaufort, S. C., April 6, 1885, April 5, 1889, and March 29, 1887; and at Savannah, Ga., April 1, 1894. The average of nine years at Kirkwood, Ga., is April 2, with extremes of March 21, 1899, and April 10, 1895. Farther north some average dates of arrival are recorded as follows: French Creek, W. Va., April 13; Washington, April 13; Beaver, Pa., April 22; Philadelphia, April 27; Englewood, N. J., April 26; southeastern New York, April 28; central Connecticut, April 28; eastern Massachusetts, April 28; southern New Hampshire, May 1; southern Maine, May 3; Montreal, May 9; Quebec, May 12; St. John, New Brunswick, May 14; North River, Prince Edward Island, May 17.

The Mississippi Valley furnishes two extended and excellent sets of records of first arrival of this species—at Helena, Ark., and Eubank, Ky. At Helena the average for the six years from 1896 to 1901 is March 31, with extremes of March 21, 1897, and April 7, 1901. The record of eight years at Eubank, Ky., is remarkably regular for a single species at a single place: April 3, 1887, April 1, 1888, April 4, 1889, April 3, 1890, April 3, 1892, April 2, 1893, April 3, 1894, April 6, 1895, average, April 3. No records south of Helena harmonize with these. If the birds alight on the Gulf coast and then move northward, they should be abundant at New Orleans and should be seen there on the average about March 20, and sometimes several days earlier. The facts are that they are not common at any place in southern Louisiana and southern Mississippi, and the dates of arrival are late: Near New Orleans, April 8, 1898, March 31, 1899, March 25, 1900; Shell Mound, Miss., April 7, 1892; Rodney, Miss., April 2, 1889. A possible explanation of this may be that the black and white warbler prefers forests growing on high, dry land, and consequently the early, strong-flying individuals, after crossing the Gulf of Mexico, do not alight until they have passed well up into the interior, while later birds and exhausted migrants stop at the first land sighted. North of Kentucky the following records show the average date of the first birds noted: Chicago, April 30; Waterloo, Ind., May 2; northern Ohio, April 30; southern Wisconsin, May 2; southern Michigan, April 29; southern Ontario, April 29; Parry Sound district, Ontario, May 4; Ottawa, Ontario, May 7; southeastern Iowa, April 19; Lanesboro, Minn., April 28; Elk River, Minn., May 3; Aweme, Manitoba, May 8; Edmonton, Alberta, May 6, 1897; Fort McMurray, Athabasca, May 15, 1901; Fort Chippewyan, Athabasca, May 26, 1893; and Fort Simpson, Mackenzie, May 28, 1861, and May 23, 1904.

The dates of arrival of the black and white warbler in Texas, relative to the dates of its arrival in the Mississippi Valley, are earlier than in the case of any other warbler. The bird reaches northern Texas at least twelve days before it arrives at corresponding latitudes on the Mississippi River and the Atlantic coast. The fact should be particularly noted that it is found in northern Texas before it is observed in the southern part of the State. The same fact will be noted in connection with several other species. To emphasize the point the full record for Texas is given: Corpus Christi, March 23, 1878, March 31, 1898, March 13, 1899; San Antonio, March 23, 1887, March 10, 1890, March 12, 1891; 30 miles northwest of San Antonio, March 13, 1880, March 14, 1900, March 15, 1901; Austin, March 11, 1890; Dallas, March 12, 1898, March 12, 1899; Gainesville, March 18, 1886, March 11, 1887.

The species reaches central Kansas about April 15.

The following are the latest records of the black and white warbler in its winter home: Minca, Colombia, March 26; San José, Costa Rica, February 28; Yucatan, April 13; St. Croix Island, March 21; Santo Domingo, April 21, 1895; Cay Lobos lighthouse, May 2–3, 1900; New Providence, Bahamas, May 10; Key West, Fla., May 2. The latest date of striking at any of the lighthouses of southern Florida is April 26.

Fall migration.—The fall migration of the black and white warbler begins so early that within a few days after the most vigorous migrants have reached their nesting grounds on the Mackenzie River, the birds in the central part of the United States have commenced to depart for the South. The earliest dates of fall arrival at New Orleans are July 10, 1900, and July 12, 1897; at Austin, Tex., July 20, 1890, and in southern Florida, the middle of July. At this time in the year black and white warblers are found over a district in North America extending through 2,500 miles of latitude, from 25° to 62°.

During the southward migration no black and white warblers have been observed to strike the Florida lighthouses until the last week in

August, with the exception of a single individual, which struck at Sombrero Key, August 10, 1886. The heaviest flights are early in October. Even in the fall this species does not strike the light in such large numbers as several other warblers. Nearly half the records are of single birds, and but few are of more than a dozen in one night. The largest recorded destruction was on October 9, 1885. On that night it was estimated that fully 200 birds struck the light at Sombrero Key, and 25 dead ones were counted the next morning. Records of the average date of the last of the species seen are: North River, Prince Edward Island, September 4; St. John, New Brunswick, September 12; southern Maine, September 19; southeastern New York, September 24; Philadelphia, October 1; Ottawa, September 13; northern Michigan, September 7; southern Michigan, September 13, and Chicago, September 22. South of the United States the dates of arrival are early: Chiapas, Mexico, August 13, 1895; Oaxaca, Mexico (at 10,000 feet elevation), August 20, 1894; San José, Costa Rica, August 10, 1883, August 20, 1889, and August 20, 1890; Bonda, Colombia, August 21, 1898. With few exceptions, the last migrants pass through North Carolina early in October. The average for eight years of the last seen in that State was October 8, though a very late individual was noted November 10, 1885. At New Orleans the latest recorded date is October 21, 1897, and at Rodney, Miss., October 3, 1888. The only records at the Florida lighthouses later than October 11 are those of single birds that struck November 10 and 14, 1884, and of two birds on the night of November 4, 1888. The only lighthouse record from west of Florida comes from Southwest Reef, Louisiana, where, during a norther, a large number of small birds struck the light at 9 o'clock on the evening of September 29, 1886. They included six species of warblers, one of which was the black and white warbler.

637. **Protonotaria citrea** (Bodd.). Prothonotary Warbler.

Breeding range.—The prothonotary warbler is preeminently a bird of damp woods in the immediate vicinity of water, and this peculiarity seems to be the leading factor in its distribution in the United States. In general terms it can be said that it inhabits the bottom lands of the Mississippi River and its tributaries to an altitude of 1,000 feet. It is susprising how closely the limits of this range agree with the 1,000-foot contour. There are records of the occurrence of the species on the Wabash River and its tributaries to 1,000 feet at St. Mary's Reservoir in northwestern Ohio,[a] and to the same altitude in Steuben County in northeastern Indiana. The bird has been taken as far north as Hamilton, Ont., Lansing, Mich., and Shiocton, Wis. Along the Mississippi

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[a] Butler, O. & O., XIII, p. 33, 1888.

River itself it is found commonly almost to St. Paul (altitude 700 feet).[a] It passes up the Des Moines River to Des Moines (altitude 800 feet), and occurs regularly up the Missouri River to Omaha (altitude 1,000 feet). At Manhattan and Neosho Falls, Kans., which mark the western limits of the range on their respective streams, it reaches the same altitude. It has been traced up the Canadian River to Oklahoma City (a few feet below 1,000 in elevation), to the Kiowa Agency, Okla. (altitude 1,000 feet),[b] and up the Red River of Texas at least to Gainesville, at nearly the same altitude.

The only points above 1,000 feet where the occurrence of the bird is recorded are Lincoln (1,100 feet)[c] and Westpoint (1,300 feet),[c] Nebr., and near Buckhannon, W. Va., in the mountains.[d] At the last place the occurrence was accidental during the fall migration, August 3, 1888. At the other two places the species breeds.

Southwestward the bird is not uncommon in suitable localities in northeastern Texas, and breeds sparingly as far south as Houston, Austin, and Matagorda County. One was taken March 26, 1880, at Lomita Ranch, on the Rio Grande near Hidalgo.

There are equally interesting records along the Atlantic coast. From Florida to Virginia the birds are common to abundant in the heavily timbered swamps along the coast below the 100-foot contour. They are less common back from the coast. They are particularly abundant in the Dismal Swamp; breed sparingly at Raleigh, N, C.; and are recorded as breeding in a few localities in Alabama at 100 to 300 feet elevation. The species breeds throughout its regular range in the United States, except possibly in the southern half of Florida. It is a bird of the Austroriparian and Carolinian zones in the Mississippi Valley, but along the Atlantic coast is largely confined to the former, its northernmost breeding record being near the Choptank River in western Delaware. Its accidental occurrence is recorded from a number of localities along the Atlantic coast in Maryland, Pennsylvania, New Jersey, New York, Rhode Island, and Massachusetts. Even in New Brunswick one was taken in October, 1862, some weeks later than the last of the species usually leave the United States. A wanderer was taken by Mr. E. W. Nelson, May 1, 1884, at Tucson, Ariz., at 2,300 feet, the highest altitude in the United States from which any specimen is recorded.

Winter range.—The prothonotary warbler is a common winter resident of suitable localities from southeast Nicaragua[e] (where it is recorded only along the east coast) to Colombia. In Costa Rica it has been noted a few times at San José (3,500 feet),[a] and is not uncommon in the hottest part of the country of Punta Arenas on the west coast. In Panama it has been taken near Chiriqui October 16 and December 10, 1900,[b] in Veragua, and along the line of the railway. The abundance of the species in winter in Colombia is attested by the fact that fifty-eight specimens, all taken in the lowlands along the north coast, were sent to the United States by two collecting parties.[c] A specimen has been secured on the island of Trinidad,[d] one at Santa Marta, Colombia,[e] one at Valle Dupar, Colombia,[f] one in Antioquia, Colombia,[g] and one south of Merida, Venezuela.[h] These last two records show that some individuals go into the mountains in winter; for although the specimen from Antioquia has no locality marked, the itinerary of the party makes it probable that it was taken at about 4,000 feet, while Merida is at an altitude of 5,400 feet.

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[a] Roberts, Auk, XVI, p. 236, 1899.

[b] Brewster, B. N. O. C., III, p. 158, 1878.

[c] Bruner, Birds of Nebraska, p. 148, 1896.

[d] Doan, Bul. W. Va. Ag. Exp. Sta. No. 3, p. 78, 1888.

[e] Richmond, Proc. U. S. Nat. Mus., XVI, p. 483, 1893.

It is thus seen that though most prothonotary warblers winter in the same character of country that furnishes the breeding grounds, yet wanderers penetrate to higher altitudes in winter than in summer. The northern limit of the winter range is not definitely settled. Several individuals have been seen in Campeche, Mexico, during the winter,[i] and the species has been taken in January on Cozumel Island off the coast of Yucatan,[j] but it is probable that few winter regularly north of Nicaragua.

Spring migration.—There are few records of spring arrival or departure of the prothonotary warbler south of the United States. The species was once seen in Cuba in April; Schott took one at Merida, Yucatan, March 28, 1865;[k] and the parties of the Biological Survey saw a few on Cozumel Island April 4–18, 1901. The latest date at which any have been taken in Colombia is January 30. The northward movement undoubtedly begins early, for the first prothonotary warblers reach the United States by the middle of March. They appear simultaneously off the coast of Louisiana and at the south end of Florida. The earliest arrival noted in Florida was that of a bird that struck Sombrero Key lighthouse March 11, 1888. There is no record of any individual reaching northern Florida before the last of the month; the average time of recorded first arrivals is the first week in April, and the earliest dates on which any were seen are March 22, 1890, when Brewster noted one on the Suwanee River, and March 22 and 26, 1885, when many were seen around Perdido lighthouse. The average date of the arrival of the earliest prothonotary warbler in spring at Raleigh, N. C., is April 18.

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[a] Cherrie, Auk, VII, p. 335, 1890.

[b] Bangs, Auk, XVIII, p. 369, 1901.

[c] Bangs, Proc. Biol. Soc. Wash., XII, p. 143, 1898; Allen, Bul. Am. Mus. Nat. Hist., XIII, p. 178, 1900; Auk, XVII, p. 367, 1900.

[d] Léotaud, Birds Trinidad, p. 179, 1866; Chapman, Bul. Am. Mus. Nat. Hist., VI, p. 24, 1894.

[e] Sclater, Cat. Am. Birds, p. 26, 1862; Sharpe, Cat. Birds Brit. Mus., X, p. 250, 1885.

[f] Sharpe, Cat. Birds Brit. Mus., X, p. 641, 1885.

[g] Sclater and Salvin, P. Z. S., p. 494, 1879.

[h] Sclater and Salvin, P. Z. S., p. 780, 1870; Ernst, Flora and Fauna Venez, 301, 1877.

[i] Renardo, O. & O., XI, p. 118, 1886.

[j] Salvin, Ibis, p. 246, 1888.

[k] Lawrence, Ann. Lyc., N. Y., IX, p. 200, 1869.

It seems evident that the Louisiana birds do not come by way of Florida, for the average date of earliest arrival in the vicinity of New Orleans for five years was March 18, the extremes being March 13, 1888, and March 23, 1895. In the vicinity of Vicksburg, Miss., the average date of earliest arrival during four years was April 6, with extremes of April 3, 1889, and April 8, 1900, or about the same as in northern Florida. Vicksburg is but 150 miles north of New Orleans, yet the birds take, on an average, nineteen days to make the short journey. This may be explained by the observations of Prof. G. E. Beyer, who has noted that when the birds arrive on the coast of Louisiana, they seem to be very much exhausted and remain resting and feeding for several days in one locality before they continue their journey northward. The average date during six years on which the earliest arrival at St. Louis was recorded was April 21, and for five years at Keokuk, Iowa, May 9.

There is one direct observation of the migration of prothonotary warblers from their winter home to the United States. A large number were seen at noon of April 22, 1881, 30 miles off the coast of Louisiana, striving to reach the shore against a severe norther. It is interesting in this connection to note that the individual that flew against the light at Sombrero Key, March 11, 1888, as mentioned above, struck at 3 o'clock in the morning, there being a fresh wind from the north. If it started to fly at the usual time, soon after dark, the previous evening, there was not time enough for it to have come from Honduras or even from Yucatan. It probably, therefore, flew from Cuba.

The prothonotary warbler also apparently crosses the Gulf to the coast of Texas; and the few records of first arrivals in Texas—Lomita ranch, March 26, 1880; Matagorda Island, March 31, 1900; Dallas, April 8, 1898, and April 6, 1899—indicate that the birds arrive on the coast at this longitude at about the same time as farther east. The dates of earliest arrival at Manhattan, Kans., are April 25, 1891, April 26, 1894, and April 26, 1895.

Fall migration.—The prothonotary warbler is one of the most interesting species to study in its fall movements on account of its avoidance of the West Indies and Mexico. The summer birds of the Mississippi Valley pass south in the fall and eventually reach the coast of the Gulf of Mexico, with Louisiana as the center of abundance. Thence three courses are open to them: To pass through Texas and Mexico; to go east and south through Florida and Cuba; or to fly directly across the Gulf of Mexico. With respect to the first route, there are only a few records from southern Texas and none from the whole of Mexico west of Campeche. The Florida route can not be so summarily dismissed. The prothonotary warbler occurs in Florida, though at the south end it is rare, the records comprising only two individuals that struck the Sombrero Key light, four taken at Key West, one at the Dry Tortugas, and a few on the mainland. The birds are more common in northern Florida and increase in numbers northward along the Atlantic coast until southern Virginia is reached, where, as already remarked, they are abundant. Since the species occurs in spring and fall in southern Florida, it is evident that a few birds migrate through the State; but the number observed is not at all commensurate with the large number that spend the summer to the northward. In the light of the present records it would seem that the northern birds fly to their winter home without passing through southern Florida. Hence, as there are no fall records as yet of birds passing through Mexico and but few of migrants through southern Florida, it follows in the light of our present knowledge that the great bulk of the species must fly across the Gulf of Mexico from the shores of Louisiana, Mississippi, Alabama, and northwestern Florida. Their point of departure is known, but not the country toward which they direct their flight. None have been found in the West Indies except an accidental visitor to New Providence, Bahamas, August 29, 1898,[a] and the specimen taken at Havana, Cuba, in April, 1859.[b] Evidently no great number of them fly directly to northern Yucatan, for they are considered rare in that country,[c] and but few have been seen by the parties of the Biological Survey. As the species has been recorded at Truxillo[d] on the mainland of Honduras, and off the coast on the island of Ruatan,[e] we must conclude that the principal line of migration is to the moister districts of southern Yucatan and Campeche, whence the birds pass to Honduras and southward.

The earliest records of fall migration are at Raleigh, N. C., July 14, 1893 and 1894, and at Key West, July 28, 1888, and August 8, 1889. These show that migration begins as soon as possible after the young are out of the nest. Statements of observers in the Mississippi Valley are to the same effect. The migration movement in fall in the United States lasts about two months. In the latter part of August the birds leave the northern part of their range. The latest date at which they were noted at Raleigh, N. C., is August 26; the latest dates at Omaha,

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[a] Bonhote, Ibis, p. 507, 1899.

[b] Gundlach, J. f. Orn., p. 178, 1862.

[c] Boucard, P. Z. S., p. 440, 1883.

[d] Ridgway, Proc. U. S. Nat. Mus., X, p. 579, 1888.

[e] Salvin, Ibis, p. 246, 1888.

Nebr., are from August 25 to September 10. The last birds to leave the United States depart late in September. The latest Florida record is of a bird that struck the light at Sombrero Key, September 25, 1888; the latest from New Orleans is September 24, 1903. The earliest recorded arrival on the coast of southeastern Nicaragua, where the prothonotary warbler is quite common in winter, was on September 2, 1892. The species has been reported as present at Valle Dupar, northeastern Colombia, on September 25.[a] Of the birds streaming down the coast some turn westward and cross the mountains, as is shown by the occurrence of the species on October 13 at San José, Costa Rica.

638. Helinaia swainsoni Aud. Swainson Warbler.

Breeding range.—The Swainson warbler is confined in summer to the Austroriparian life zone, where it is strictly a swamp lover. Along the Gulf coast from Louisiana to northwestern Florida it is not uncommon in the few localities that seem suited to its habits. Thence it ranges up the Wabash River to Knox County, Ind., which marks the extreme limit of the Austroriparian zone in Indiana, and to southeastern Missouri[b] on the Mississippi River. Along the Atlantic coast its range extends to the upper limit of the same zone in the Dismal Swamp of Virginia.[c] The southernmost breeding record is the lower Suwanee River in Florida. There is a record of the occurrence (probably accidental) of the species in Navarro County, Tex., August 24, 1880; and a bird struck the lighthouse at Port Bolivar, Tex., April 17, 1904.

Winter range.—So far as known the Swainson warbler is found regularly in winter only in Jamaica, where it has been taken on various dates ranging from October 1 to April 8.[d] A single bird, probably a straggler, was captured near Vera Cruz, Mexico, in the winter of 1887–88.[e]

Spring migration.—In spring migration a single specimen was taken in April at Habana,[f] one in the same month on the Bimini Islands, Bahamas,[g] and three struck the Cay Sal light-house, Bahamas, March 23–26, 1901.[h]

The earliest recorded spring arrival in the United States was on March 22, 1890, on the Lower Suwanee River. The same year the species was taken at the Tortugas March 25 and 26 and April 5. The other records of first arrival in spring are: Sombrero Key lighthouse,

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[a] Sharpe, Cat. Birds, Brit. Mus., X, p. 641, 1885.

[b] Widmann, Auk, XII, p. 112, 1895.

[c] Fisher, Auk, XII, p. 307, 1895.

[d] Merriam, Auk, II, p. 377, 1885.

[e] Salvin & Godman, Ibis, p. 236, 1889.

[f] Gundlach, J. f. Orn., p. 412, 1872.

[g] Cory, Auk, VIII, p. 296, 1891.

[h] Bonhote, Auk, XX, p. 171, 1903.

April 3, 1889; Savannah, Ga., April 8–16, 1894; Kirkwood, Ga., May 4, 1898; Frogmore, S. C., April 1–5, 1885; New Orleans, April 8, 1898, April 10–13, 1899; Bayou Sara, La., April 8, 1887; Coosada, Ala., April 12, 1878.

Fall migration.—That many Swainson warblers journey to their winter home by way of Florida is shown by the manifold records from the mainland, the records from the islands of Key West and Tortugas, and the numerous records of striking the light at Sombrero Key. There is at present only one record of the occurrence of the species in Cuba. From the numbers passing through Florida, however, it is probable that it will yet be found to be common locally in Cuba when the proper situations are examined. The occurrence of the bird at the Tortugas would seem to indicate that it migrates directly from Louisiana across the Gulf to Cuba.

Fall migration begins rather late when compared with the date of nesting. Fledged young have been seen near Charleston, S. C., by June 9, but the earliest date of striking at Sombrero Key lighthouse is August 17, 1888. Other records at this light are: September 14 and 21, 1884; September 27 and October 26, 1885; October 7, 1886; September 16, 17, and 18, 1887; September 25 and 28 and October 2 and 9, 1888. On most of these dates only one bird struck the light. The fall records at Key West are September 20, 1887, September 18–20, 1888, and the middle of September, 1889.

639. Helmitheros vermivorus (Gmel.). Worm-eating Warbler.

Breeding range.—The worm-eating warbler is one of the best examples of a bird of the Carolinian zone, as it breeds commonly in most places throughout the zone that are adapted to its needs, and in but few localities outside of it. It is common in the breeding season in the heavily timbered bottom lands of southern Illinois and Indiana and eastward to the lower portions of the valleys of the Hudson and Connecticut rivers. It is not uncommon in the lower parts of the Allegheny Mountains from northwestern South Carolina to southern New York, and from the Dismal Swamp of Virginia northward. Outside of this usual range it has been taken in Massachusetts, central New York, northern Ohio, southern Michigan, southern Wisconsin, central Iowa, and the southeastern corner of Nebraska and eastern Kansas. Although Mr. McCormack took a set of five eggs at La Grange, Ala., April 29, 1890, there are not many records of the breeding of the species south of the latitude of southern Virginia, except in the mountains. It is a rare summer resident at Raleigh, N. C., and in the National Museum there is a set of eggs taken May 17, 1890, by G. Mabbitt at Rodney, Miss. Beckham thought the bird probably nested at Bayou Sara, La., though he found no nests. These few instances serve but to accentuate the fact that the worm-eating warbler is found in summer but rarely outside of the Carolinian life zone.

Winter range.—The center of abundance in winter is Guatemala, where the species is generally distributed both in the mountains and along the coast. The southernmost record is that of a specimen taken at Santa Fe, Panama. Northward from this point the bird has been taken at San José, Costa Rica;[a] on the island of Bonacca,[b] off the north coast of Honduras; at Merida, Yucatan, and on the islands of Cozumel,[b] Cayman Brack,[c] and Jamaica.[d] It is a regular winter resident in Cuba, and a few individuals winter in southern Florida. One of the parties of the Biological Survey found it moderately common at Huehuetan on the coast of Chiapas, Mexico. It has been taken at Orizaba and Jalapa in the temperate region of Vera Cruz, and also along the coast of southeastern Tamaulipas, at Alta Mira.[e] The last is the northernmost record in Mexico, and the date—January 26—indicates that the bird was wintering. The westernmost point at which the species has been noted is Pachuca, Hidalgo,[f] where a few have been seen during the latter part of the winter. There are several records from the Bahamas, during November, December, and January, and the species was noted on New Providence Island[g] by the naturalists of the *Albatross* from March 23 to April 16 and on the island of Great Abaco[g] March 3. One was taken on the island of Great Inagua[h] September 22, 1891. This is to the present time the extreme southeastern record.

Spring migration.—The northward movement of the worm-eating warbler probably begins in March, as the earliest migrants have been noted at the Tortugas April 5, 1890, and the earliest records of striking at Sombrero Key are April 8, 1887, and April 3, 1889. Records for ten years give the average date of arrival at Raleigh, N. C., as April 24, with extremes of April 19 and April 30. In the mountains at Asheville, N. C., the average date for four years was April 21, which shows that the worm-eating warbler is one of the few birds seen in the mountains as early as on the plains. Other records of average date of arrival are: White Sulphur Springs and Frenchcreek, W. Va., April 28; Washington, May 2; Beaver, Pa., May 4; southeastern New York, May 7; central Connecticut, May 11; St. Louis, April 29, and Brookville, Ind., April 23. The bird was noted at Taunton, Mass., May 9, 1890. The time of arrival on the coasts of Louisiana and Texas is about the same as in southern Florida; the earliest recorded dates are

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[a] Cherrie, Auk, VIII, p. 278, 1891.

[b] Salvin, Ibis, p. 246, 1888.

[c] Cory, Auk, VI, p. 31, 1889.

[d] Scott, Auk, X, p. 340, 1893.

[e] Richmond, Proc. U. S. Nat. Mus., XVIII, p. 631, 1896.

[f] Renardo, O. & O., XI, p. 118, 1886.

[g] Ridgway, Auk, VIII, pp. 334, 335, 1891.

[h] Cory, Auk, IX, p. 49, 1892.

April 6, 1881, at Houston, Tex., and April 10, 1899, and April 7, 1900, at New Orleans. At New Orleans the migration of the species is at its height about April 20. In the southern Rio Grande region of Texas the bird has not been noted, although the avian life of the region has been thoroughly investigated; hence if it occurs it must be as a rare migrant. Houston is the southernmost point in Texas from which it has been recorded to date, and Alta Mira is the northernmost point of record in Mexico. Since the species is apparently not common west of Louisiana or north of Vera Cruz, it is probable that the principal line of migration is from Yucatan and the coast immediately west of Yucatan directly north to the northern coast of the Gulf of Mexico.

Fall migration.—The worm-eating warbler is not an early fall migrant. It begins to move south in August, and birds from the eastern part of the United States reach southern Florida by the end of August or by early in September. The species has been recorded on August 30 at Key West, and was noted at the Fowey Rocks light, September 2, 1889, and at Sombrero Key light, September 9, 1885. The six years' average of the dates on which the first southbound bird was observed to strike at any of the lighthouses is September 14.

Cuba is reached about the middle of September; in Jamaica the earliest recorded arrival was on October 7, and at San José, Costa Rica, November 23, 1890. To the westward the few dates of fall migration obtained indicate movements on the coast of Mississippi at about the same time as at the same latitude farther east.

The four years' average of closely agreeing dates of the latest migrants at Raleigh, N. C., was September 2. At New Orleans September 30 is the latest date at which the birds have been noted; at Key West, about October 1; at Sombrero Key, September 25; and at Fowey Rocks, October 5. A delayed bird was seen in northern South Carolina, October 6, and one in northern Florida, December 26.

640. **Helminthophila bachmani** (Aud.). Bachman Warbler.

When 'Bird Migration in the Mississippi Valley' was published, the Bachman warbler had just been rediscovered in the United States. The records given in that publication include all specimens taken to the spring of 1888 inclusive. Information regarding the bird then stood as follows: Besides the type, 39 specimens had been taken at Lake Pontchartrain, Louisiana, in the spring of 1886, March, 1887, and March, 1888; one had been taken at the Sombrero Key light-house; one had been seen at the same point April 24, 1887; and one had been taken by Atkins at Key West August 30, 1887.[a] In addition to these records Gundlach had reported that the Bachman warbler was a winter resident in Cuba, arriving in September, and that in his early days of collecting he used to see it quite often, but had not lately observed it.[a]

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[a] Scott, Auk, IV, p. 348, 1887.

Since 1888 enough additions have been made to our knowledge of this rare warbler to permit fuller treatment of its range and migration than was then possible. The total number of specimens taken is now about 225, and at least twice as many more have been seen. The records show that it is a pronounced swamp warbler and confined to the Austroriparian zone. It has been secured in the breeding season in North Carolina, South Carolina, Arkansas, and Missouri; as a young of the year in Virginia; in winter in Cuba, and during migration in Florida and Louisiana. These various later records may be summarized as follows:

Breeding range.—1891. One bird was taken April 27 and another May 22, at Raleigh, N. C. Both were males in breeding condition.[b]

1892. A single specimen, probably a young male of the year, was taken by Mr. P. H. Aylett in King William County, Va., in August.[c]

1896. A male was taken on May 7 and another on May 9, in Green County, Ark. Both were evidently breeding.[d]

1897. A nest in which the full complement of eggs was deposited by May 16 was found by Mr. Otto Widmann in the St. Francis River region of southeastern Missouri where the bird was ascertained to breed commonly.[e] Since these eggs are surely authentic and are unspotted, it is probable that the eggs originally described as those of Bachman warbler[f] were erroneously attributed to the bird.

1901. In the spring a male that was evidently breeding was taken at Mount Pleasant, near Charleston, S. C.,[g] which is not far from where Doctor Bachman took the type specimen in July, 1833; and a bird struck the lighthouse at Cay Sal, Bahamas, March 13.[h]

1902. A specimen was taken at Bay St. Louis, Miss., March 26.

Winter range.—The Bachman warbler has not been taken in winter outside of Cuba.

Spring migration.—1889. A large flight of Bachman warblers was observed on March 3 at Sombrero Key, Florida, and 20 females and 1 male struck the light, the male and 5 females being killed. Two of the dead birds, including the male, were sent to the Biological Survey for identification. A month later 5 females struck the light. As they struck late at night, it seems probable that they had just performed the flight from Cuba, nearly 200 miles distant. Two were shot March 21 in Brevard County, on the east coast of Florida.[i]

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[a] Gundlach, J. f. Orn., p. 411, 1872.

[b] Brimley, Auk, VIII, p. 316, 1891.

[c] Wm. Palmer, Auk, XI, p. 333, 1894.

[d] Widmann, Auk, XIII, p. 264, 1896.

[e] Widmann, Auk, XIV, p. 305, 1897.

[f] Bailey, B. N. O. C., VIII, p. 38, 1883.

[g] Wayne, Auk, XVIII, p. 274, 1901.

[h] Bonhote, Auk, XX, p. 178, 1903.

[i] Chapman, Auk, VI, p. 278, 1889.

1890. At the Tortugas, Fla., a male was taken March 26, and a female April 9.[a] During this year the birds were observed for the first time on the mainland of Florida. Spring migrants were found by Brewster and Chapman to be not uncommon on the Suwanee River.[b] The first male was taken March 12; the first female, March 15. The date of greatest abundance was March 23, when more than 30 individuals were identified. The next day was the last on which they were seen. The country traversed changed in character on that date and probably became unsuited to the species. None of the 46 specimens secured would probably have bred for several weeks.

1893. In March Arthur H. Wayne obtained about 50 specimens on the Suwanee River, Florida.[c]

1894. In the spring 8 specimens were taken in Jefferson County, Fla., along the Wacissa and Ancilla rivers.[d]

Fall migration.—1888. The following captures and observations were made at Key West[e] by Mr. Atkins: July 26, 4 taken, 20 more noted; July 28, 3 taken, 2 more noted; July 29, 2 taken, 2 more noted; August 6, 2 taken, about 22 more noted; August 8, 5 taken, about 7 more noted; August 9, 2 taken, about 6 more noted; September 5, 1 (the last) noted.

1889. Important records were again made at Key West[f] by Mr. Atkins, as follows: July 17, 1 male and 1 female noted (the earliest arrivals from the north); July 23, 3 noted; July 31, 3 noted; August 4, about a dozen noted; August 4–25, passing birds noted regularly, usually in small numbers, but reaching the maximum of 25 to 30 on August 8. None were observed after August 25. Mr. Atkins secured about 40 specimens during the time of passage.

1900. One taken at Tallahassee, Fla., August 4, and one in Madison County, La., in August.

641. **Helminthophila pinus** (Linn.). Blue-winged Warbler.

Breeding range.—The summer range of the blue-winged warbler is rather restricted, and its limits correspond quite closely with the Carolinian life zone. The center of abundance in the breeding season is central and southern Ohio, Indiana, Illinois, northern Kentucky, northern Missouri, and southern Iowa. It thus includes the lower Ohio Valley up to 1,000 feet altitude, and the valley of the Missouri, through the States of Missouri and Kansas, to the same altitude in southeastern Nebraska. To the eastward the bird avoids the mountains entirely, even in migration, but breeds rarely and locally in some of the lower parts of southern Pennsylvania and Maryland (one record). There is a local colony, where it is almost common, that includes southeastern

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[a] Scott, Auk, VII, p. 313, 1890.

[b] Brewster, Auk, VIII, p. 149, 1891.

[c] Wayne, Auk, X, p. 338, 1893.

[d] Wayne, Auk, XII, p. 367, 1895.

[e] Scott, Auk, V, p. 428, 1888.

[f] Scott, Auk, VII, p. 16, 1890.

New York and adjoining parts of New Jersey and Connecticut. The bird occurs in western New York and through southern Michigan to southern Minnesota. In the Austroriparian zone it breeds very rarely, as but three recorded instances are known: in the Creek Nation, Indian Territory; on the St. Francis River, in extreme southeastern Missouri, and on the coast of Georgia near the mouth of the Altamaha River.

Migration range.—Through most of the Austroriparian region of the Southern States the species is a migrant, but is nowhere recorded as even tolerably common. Along the south Atlantic coast it occurs as a rare migrant in spring and fall, and all the records come from below the 500-foot contour. There are single records from South Carolina and Georgia, a few from Alabama and Louisiana, and quite a number from eastern Texas, even to the Rio Grande.

Winter range.—In winter, so far as noted, the blue-winged warbler is quite widely distributed, but is nowhere common. A single specimen was taken at Metlaltoyuca, Puebla, February 22, 1898, by one of the parties of the Biological Survey. On four other occasions the species has been taken in Mexico, in each instance in the State of Vera Cruz. Its special winter home seems to be in Guatemala, where it has been found from near sea level to an elevation of 4,000 feet. The only locality on the Pacific slope at which it has been recorded is Retalhuleu in southwestern Guatemala, at about 1,000 feet altitude. On the mainland east of Guatemala there are five records of its occurrence. An individual was taken by Gaumer in northern Yucatan,[a] and another by Dyson in Honduras;[b] one was seen February 8, 1892, and one January 17, 1893, along the coast of southeastern Nicaragua;[c] and one was taken March 21, 1899, at Chirua, Colombia,[d] at 7,000 feet altitude—the only record of the occurrence of this species in South America. In the West Indies, excepting the specimen taken on the island of Abaco, Bahamas, April 7,[e] its presence has never been recorded.

Spring migration.—South of the United States no notes of blue-winged warblers in migration have been recorded except in the single instance of an individual seen April 7, 1897, at Jalapa, Vera Cruz;[f] but northward migration must commence in March, as the earliest recorded arrival from the South at New Orleans is March 22, 1898. Spring records from the mainland of Florida are lacking, but three individuals were noted on the Dry Tortugas, March 23, 1890, and another individual on each of the next two days. The species was noted at Shelby, Ala., April 4, 1898; Washington, April 26, 1891; and, on the average, at Beaver, Pa., May 3, Englewood, N. J., May 4, southeastern New York, May 4, and Portland, Conn., May 12. It was seen at Framingham, Mass., May 13, 1896. Excellent record was kept of its arrival for eight consecutive years at Eubank, Ky. (where it breeds somewhat commonly), the details of which may be thus tabulated:

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[a] Boucard, P. Z. S., p. 440, 1883.

[b] Sharpe, Cat. Birds, Brit. Mus., X, p. 239, 1885.

[c] Richmond, Proc. U. S. Nat. Mus., XVI, p. 483, 1893.

[d] Bangs, Proc. Biol. Soc., Wash., XIII, p. 105, 1899; Allen, Bul. Am. Mus. Nat. Hist. XIII, 178, 1900; Auk, XVII, p. 367, 1900.

[e] Ridgway, Auk, VIII, p. 334, 1891.

[f] Chapman, Bull. Am. Mus. Nat. Hist., X, p. 24, 1898.

Arrival of blue-winged warbler at Eubank, Ky.

Year.	First noted.	Next noted.	Species became common.
1888	Apr. 14	Apr. 15	Apr. 15
1889	Apr. 13	Apr. 14	Apr. 18
1890	Apr. 13	Apr. 14	Apr. 14
1891	Apr. 15	Apr. 16	Apr. 18
1892	Apr. 21	Apr. 22	Apr. 25
1893	Apr. 10	Apr. 11	Apr. 13
1894	Apr. 16	Apr. 25	Apr. 27
1895	Apr. 12	Apr. 22	Apr. 25
Average	Apr. 14	Apr. 17	Apr. 19

The average date of earliest spring arrival during seven years at St. Louis is April 22, with extremes of April 17, 1883, and April 24, 1884. At Brookville, Ind., the average date of arrival is April 26, and the earliest April 17, 1896. Other records of average date of the first seen are: Rockford, Ill., May 6; Petersburg, Mich., May 10; Keokuk and Grinnell, Iowa, May 4; Lanesboro, Minn., May 14. Recorded arrivals in Texas are: Fort Brown, April 20, 1886; Brownsville, April 10, 1890; Refugio County, April 12, 13, and 14, 1887; Corpus Christi, April 7 and May 1, 1884; San Antonio, April 14, 16, and 24, 1890, and May 12, 1891; and Waco, April 29, 1900. At Onaga, Kans., near the western limit of the range, the average for five years was May 4, with extremes of May 1, 1892, and May 8, 1898.

Fall migration.—While the bulk of the blue-winged warblers move south in August and early September, a few of the birds remain for several weeks longer. The average date of the last noted at Lanesboro, Minn., is August 28, and the latest date September 1, 1889. The last bird was seen at Providence, R. I., October 10, 1897. The average date of the last seen during four years at New Providence, N. J., was October 3, and the latest October 12, 1894. Other records of the last seen are: Lynchburg, Va., October 8, 1899; French Creek, W. Va., October 10, 1891; Raleigh, N. C., September 4, 1888; Lebanon, Ind., October 22, 1894; Eubank, Ky., September 13, 1889, and New Orleans, September 18, 1901. Most of the individuals of the species migrate across the Gulf of Mexico, apparently avoiding Florida on the east and Texas and Vera Cruz on the west, as there is no record of the occurrence of this warbler in fall in Texas, and but one in Florida—that of a bird taken at Key West August 30, 1887.

642. Helminthophila chrysoptera (Linn.). Golden-winged Warbler.

Breeding range.—The bulk of the golden-winged warblers breed in an area rather restricted, but the summer home of the species as a whole is quite extended. The center of abundance is Michigan, lower Ontario, and northern Wisconsin. A few individuals pass westward to eastern Minnesota, and accidental visitants have been noted at Winnipeg, Manitoba. The species breeds sparingly in northern Illinois, northern Indiana, and extends eastward through New York to southeastern New Hampshire, Massachusetts, Connecticut, and northern New Jersey. The southern limit of the breeding range, which is not well settled, takes a southerly dip in the mountains from Pennsylvania to northern Georgia, where at 2,000 to 4,000 feet elevation the bird is locally almost as common as in Michigan. The summer range thus coincides almost exactly with the Alleghenian zone, marking the golden-winged warbler as one of the few species whose breeding range is practically confined to the zone.

Migration range.—The species is recorded as occurring in eastern Missouri and eastern Iowa in migration, but it is not yet known in Kansas, and the earlier records of its appearance in Nebraska are not corroborated by later observations. One accidental occurrence in New Mexico has been recorded.

Winter range.—The records show that most golden-winged warblers spend at least five months of the year in the mountains of Central and South America, though a few occur along the coast. The principal winter home seems to extend from southern Nicaragua to Costa Rica, Panama, and Colombia. The species has been noted in winter in northern Guatemala at Vera Paz above 4,000 feet. It has not been recorded as occurring in Honduras or western Nicaragua and is rare in Mexico, as shown by the fact that it has never been taken there by any of the parties of the Biological Survey. One of Gould's specimens in the National Museum is marked Mexico; Renardo records a few seen in the winter season of 1885–86 at Campeche and Merida,[a] and a single specimen was taken by A. E. Colburn at Paso Nuevo, Vera Cruz, March 16, 1901. These are the only records of the occurrence of the bird in Mexico. There is but one record of its occurrence in Cuba, this being in April.

In Costa Rica it was noted in September, 1889, and October, 1890, at San José,[b] and in the fall of 1895 on the west slope of the mountains at 1,400 to 2,000 feet.[c] It is uncommon in winter along the coast of southeastern Nicaragua,[d] where, however, specimens were taken November 5, 1892. In Panama it has been taken quite frequently, the specimens coming both from lowlands and from as high as 7,700 feet in the mountains.

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[a] Renardo, O. & O., XI, p. 118, 1886.

[b] Cherrie, Auk, VII, p. 335, 1890; VIII, p. 278, 1891.

[c] Underwood, Ibis, p. 433, 1896.

[d] Richmond, Proc. U. S. Nat. Mus., XVI, p. 483, 1893.

The southernmost extension of the winter range is apparently Colombia, where the species has been taken at Bogota,[a] in the Santa Marta region at Minca (2,000 feet)[b] and Las Nubes (5,000 feet),[c] and in Antioquia at Medellin (5,000 feet),[d] and still higher in the mountains (above 6,000 feet).[e] During migration it has been taken on the north coast at Bonda[f] and in the neighboring mountains at Pueblo Viejo (8,000 feet).[g]

Spring migration.—The golden-winged warbler is a late migrant in the spring. It has been noted south of the United States (in Colombia) as late as March 20, 1898, while the earliest record of its spring arrival in the Gulf States was made at Rising Fawn, northwestern Georgia, April 11, 1885. At St. Louis, Mo., the average date of spring arrival during six years was May 1. The species has a more restricted migratory range than would be judged from the extent of its breeding ground. There are no records of its occurrence in spring in the coast region of South Carolina, Georgia, or Alabama, and but one at any point in Florida. Its only recorded occurrences on the coast have been near Galveston, Tex., and in Louisiana and Mississippi. It was not noted in spring by Loomis in Chester County, S. C., during fourteen seasons of collecting; and Brimley in sixteen years at Raleigh, N. C., saw it only twice in spring—May 7, 1889, and May 7, 1891. It has been seen but twice in the mountains at Asheville, N. C.—April 22, 1893, and April 27, 1899. Farther north it has appeared on the average at Frenchcreek, W. Va., May 2; Washington, May 3; Beaver and Waynesburg, Pa., April 30; Portland, Conn., May 10; near Boston, May 10. The single record of the golden-winged warbler for New Hampshire is Durham, May 24, 1898. The average date of the first of the species seen at St. Louis is May 1, the earliest April 27, 1882. Other records which show average dates are: Chicago, May 5; Rockford, Ill., May 7; Waterloo, Ind., April 30; Wauseon, Ohio, May 4; Petersburg, Mich., May 4; southern Ontario, May 6; Keokuk, Iowa, April 30. Records of the earliest bird seen are: North Freedom, Wis., May 10, 1902; Lanesboro, Minn., May 8, 1887; Elk River, Minn., May 12, 1888; St. Vincent, Minn., May 9, 1896. An individual of the species was taken at Coleto Creek, Texas, May 3, 1887, and one struck the light at Port Bolivar, Tex., May 6, 1903.

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[a] Sclater, P. Z. S., p. 143, 1855; Cat. Am. Birds, p. 28, 1862; Baird, Rev. Am. Birds, p. 175, 1864.

[b] Sclater and Salvin, Ibis, p. 117, 1880.

[c] Specimen in the Carnegie Museum, Pittsburg, Pa.

[d] Sharpe, Cat. Birds Brit. Mus., X, p. 237, 1885.

[e] Sclater and Salvin, P. Z. S., p. 494, 1879.

[f] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 178, 1900; Auk, XVII, p. 367, 1900.

[g] Bangs, Proc. Biol. Soc. Wash., XII, p. 160, 1898.

Fall migration.—Although tardy in spring, the golden-winged warbler is one of the earliest of fall migrants. The birds which descend the Mississippi Valley usually reach the coast of Louisiana during the fore part of August, and the first arrival from the North at New Orleans has been recorded as early as July 23, 1898. Farther migration southward is made rapidly, for the birds appear in August in the mountains of Costa Rica, and one was taken as early as September 6 on the north coast of Colombia. The earliest fall migrant was seen at Washington August 8, 1889. The earliest fall arrivals recorded by Loomis in Chester County, S. C., were on August 20, 1887, and August 28, 1888. At Raleigh, N. C., a specimen was taken August 26, 1886; and several were seen August 9–19, 1890, at Greensboro, Ala. Records of the last of the species seen in the United States are: Lanesboro, Minn., September 8, 1889; Livonia, Mich., September 21, 1891; Chicago, September 25, 1895; Englewood, N. J., September 2, 1886; Frenchcreek, W. Va., September 15, 1892; Chester County, S. C., September 22, 1887, and New Orleans, September 21, 1897. Some exceptionally late birds were reported as seen at Grand Rapids, Mich., October 4, 1886.

The principal path of migration followed by the golden-winged warblers of the Allegheny region extends from the southern end of the Allegheny Mountains south across the Gulf of Mexico to the forested regions of Central America, and thence southeast to South America. East of this path the species has been noted during the fall migration at Key West, August 25, 1889, and once in April at Habana, Cuba, during the northward movement.

643. Helminthophila luciæ (Cooper). Lucy Warbler.

The Lucy warbler breeds in Arizona and southwestern Utah, and migrates in winter to northwestern Mexico. Its arrival was noted in Arizona at Fort Lowell, March 20, 1902; Oracle, April 1, 1899; Fort Mojave, March 25, and at Whipple Barracks, March 31, 1892.

644. Helminthophila virginiæ (Baird). Virginia Warbler.

The Virginia warbler breeds in the Rocky Mountains as far north as Wyoming and Utah, and from Colorado to Nevada. It is one of the commonest breeding warblers in Colorado, at altitudes ranging from 5,000 to 7,500 feet, but is not found east of the foothills. It retires in winter to Mexico, where it has been taken by the parties of the Biological Survey as far south as Morelos and Guerrero. The first migrant was seen at Cooney, N. Mex., April 10, 1889, and at Huachuca, Ariz., April 10, 1902.

645. Helminthophila rubricapilla (Wils.). Nashville Warbler.

Breeding range.—The breeding range of the Nashville warbler extends from Massachusetts and Connecticut westward to northern

Illinois, and northward to Saskatchewan (Cumberland House) in the west and Cape Breton and Gaspé Bay in the east. The species is a rare visitor to Newfoundland. The southern limit of the breeding range coincides quite closely with the southern boundary of the Alleghenian zone. The bird breeds more commonly in New England than elsewhere in the United States, becoming less and less common to the westward.

Winter range.—The principal winter home of the Nashville warbler is southern and eastern Mexico, in Puebla, Vera Cruz, eastern Oaxaca, Chiapas, and Campeche, and includes both highlands and lowlands. The parties of the Biological Survey found the species rather common in the open woods of the coffee plantations near Motzorongo, Vera Cruz, only 800 feet above sea level, and equally common at 3,000 feet in Chicharras, Chiapas, near the Pacific coast. They found it in the interior at 3,000 feet at Piaxtla, Puebla, and in the mountains of Oaxaca to about 8,000 feet. It was taken in the last of September, 1892, in the mountains of San Luis Potosi at 8,000 feet. In mild winters the species is found as far north as the Rio Grande of Texas. It also occurs in Guatemala, but probably only as a rare straggler, as there is no recent record of its occurrence.

Spring migration.—Although the Nashville warbler is a familiar bird in eastern Texas and in New England, it is scarcely known in the southeastern part of the United States. In the District of Columbia it is a rare migrant. In North Carolina it is rare in the mountains and is scarcely recorded elsewhere. In South Carolina it was not seen by Loomis during fourteen years of careful collecting, and seems to have been recorded but once in the State. In Florida one accidental occurrence is known, and the bird has apparently not been recorded from Alabama, Mississippi, or Louisiana. It is also unknown in the West Indies and South America, and is practically absent from Central America.

Assuming that the northward migration route of eastern birds follows the direct course along the western slope of the Alleghenies, the dates of arrival of the Nashville warbler in New England should be considerably later than those at corresponding latitudes in the Mississippi Valley, whereas there is but little difference between them. Some records of average date of arrival are: Frenchcreek, W. Va., April 28; Washington, May 5; Beaver, Pa., May 1; New Providence, N. J., May 4; southeastern New York, May 3; Portland, Conn., May 7; Boston, May 5; Randolph, Vt., May 7; southern New Hampshire, May 5; Lewiston, Me., May 9, and St. John, New Brunswick, May 16. The first arrival was seen at Montreal, May 10, 1890; Quebec, May 14, 1890; Scotch Lake, New Brunswick, May 9, 1902, and Petitcodiac, New Brunswick, May 5, 1886. The average date of arrival at St. Louis is April 26; at Chicago, May 3; in northern Ohio, May 5;

at Petersburg, Mich., May 7; in southern Ontario, May 6, and at Ottawa, May 14. Similar records west of the Mississippi are: Keokuk, Iowa, May 6; Grinnell, Iowa, May 5; Lanesboro, Minn., May 9, and Minneapolis, May 14. The Nashville warbler enters southern Texas the last of March; it was noted near Hidalgo, March 15, 1880, and at San Antonio, March 30, 1880, March 21, 1889, March 27, 1890, and March 27, 1891. These dates compared with those of earliest arrival at St. Louis indicate a fair rate of speed, 27 miles per day, between Texas and St. Louis. But on the assumption that the breeding birds of Massachusetts also enter Texas the last of March, their average daily speed must be nearly twice as great as that of the St. Louis birds. Many more data on the movements of this species are required before the routes of migration can be determined with satisfactory exactness. In spring migration the bird has been seen at San Antonio, Tex., as late as May 12, 1891. The last northward migrants leave St. Louis about May 20.

Fall migration.—The earliest migrating Nashville warblers are scarcely seen south of their breeding grounds before the middle of August. First migrants have been noted at Chicago, August 16, 1896; Beaver, Pa., September 5, 1903; Ossining, N. Y., August 11; Englewood, N. J., August 26, 1887; Washington, September 5; Frenchcreek, W. Va., September 7, 1890; St. Louis, September 17, 1885, and Gainesville, Tex., October 11, 1885. The average date of the last seen at Lanesboro, Minn., is September 27; at Ottawa, September 20; at St. John, New Brunswick, September 2; in southern Maine, September 11, and at Renovo, Pa., September 26.

645a. Helminthophila rubricapilla gutturalis (Ridgw.). Calaveras Warbler.

The Calaveras warbler inhabits the Pacific slope, breeding from central California north to British Columbia and east to the Rocky Mountains. Its migration is a simple movement south and southeast by land to Mexico. The parties of the Biological Survey found this western form common during the winter at sea level in Colima and Guerrero, at 7,000 feet in the mountains of Jalisco, and at elevations ranging to 8,000 feet in the mountains about the valley of Mexico. The southernmost point from which it is recorded is Sta. Efigenia, Oaxaca, where it was taken by Sumichrast December 24, 1868. A few individuals may occasionally winter in southern California, as the species was seen February 3 and 9, 1895, at San Bernardino. The arrival of the first in spring was noted at Yuma, Ariz., March 11, 1902; Twin Oaks, Cal., March 24, 1889; Huachuca Mountains, Arizona, April 1, 1902; Dunlap, Cal., April 23, 1891, and Revelstoke, B. C., May 9, 1890. The last was seen in fall at Dunlap, October 12, 1890, and at Cooney, N. Mex., September 30, 1889.

646. Helminthophila celata (Say). Orange-crowned Warbler.

Breeding range.—The principal summer home of the orange-crowned warbler is from Manitoba northwest to Kowak River, Alaska. This may be considered the normal home, but many of the species find congenial boreal conditions in the Rocky Mountains. The species has been taken in several localities in the mountains of Colorado, where it breeds not uncommonly from 6,000 to 8,000 feet and less commonly 1,000 feet higher. Its occurrence in the Rocky Mountains, however, is more frequently that of a migrant. Manitoba marks the eastern limit at which the species is common; thence to New Brunswick it is of rare occurrence, though strangely enough it was once found breeding at Brunswick, Me. It probably also breeds rarely in Wisconsin.

Winter range.—In migration the orange-crowned warbler has been taken along the Atlantic coast from Massachusetts to Key West. It winters rarely and irregularly as far north as Charleston, S. C., and along the Gulf coast to the Rio Grande. It has sometimes been seen in winter in quite large numbers near New Orleans; is a common winter bird in extreme southern Texas, and occasionally occurs as far north as San Antonio. There is no West Indian record of its occurrence as yet, though on October 5, 1887, and for a few days afterward, it was not uncommon at Key West, Florida.

The winter home of the great bulk of the species is northeastern Mexico. It is generally distributed in the eastern Cordillera and over that portion of the table-land of Mexico that lies east of these mountains, south to the mountains about the valley of Mexico and to Mount Orizaba. At the northern limit of its winter range it is found from sea level along the coast of Texas to 2,000 feet on the table-lands of northern Nuevo Leon. Farther south it passes to higher altitudes, occurring at 6,000 to 10,000 feet in San Luis Potosi, Guanajuato, Hidalgo, and Puebla. It is very common in the vicinity of Mount Orizaba, Vera Cruz. On the Pacific coast of Mexico, as shown by material secured by field naturalists of the Biological Survey, it is replaced by its western form *lutescens.*

Spring migration.—By the first week in March the orange-crowned warbler begins to move into the lower lands of Texas, but during the first half of the month seems to make little progress beyond the region in the southern part of the State, where it often winters. Even in the vicinity of San Antonio, Tex., most of the dates of arrival are as late as the last week of March. The first bird was seen April 17, 1902, near the San Pedro River in southern Arizona. The records made at Onaga, Kans., show arrival on April 17, 1892; April 26, 1895; April 17, 1896; April 24, 1897; and April 25, 1898: average, April 24. Eastward the species arrives at St. Louis on the average on April 27, and to the westward it reaches the same latitude at the base of the mountains in Colorado May 2–5. The average date of arrival at Chicago is May 6, in southern Ontario May 13, and at Ottawa May 18. The averages for seven years at Lanesboro, Minn., and Aweme, Manitoba, are May 2 and May 7, respectively. The first arrival was seen at Red Deer, Alberta, May 14, 1892; Fort Chippewyan, Athabasca, May 23, 1901; Fort Resolution, Mackenzie, May 22, 1860; Fort Simpson, Mackenzie, May 21, 1904; and on the Kowak River, Alaska, May 25, 1899. The species is so rare along the Atlantic coast that no regular northward movement in that region can be traced.

Some of the recorded dates of latest occurrence in spring are as follows: At Gainesville, Fla., April 11, 1887; at Coosada, Ala., April 15, 1878; near Beaufort, S. C., April 29, 1885; in Chester County, S. C., April 24, 1889; at New Orleans, March 11, 1894; at Corpus Christi, Tex., April 22, 1891; at San Antonio, Tex., April 30, 1890, and at Dallas, Tex., April 30, 1898. The last orange-crowned warblers to leave the southern limit of their winter range in Mexico take their departure the first week in April, and about a month later the latest northward migrants pass through central Missouri.

Fall migration.—But few records have been made of the fall movements of this species. It is never common in the fall at St. Louis, but has been noted there on different dates ranging from September 9 to October 26. The record of a single individual at Key West, Fla., September 8, 1889, is certainly very early. The last were noted near latitude 64° north of Fort Rae, Mackenzie, August 16, 1903; at Aweme, Manitoba, October 3, 1901; Lanesboro, Minn., October 6, 1891; Ottawa, September 30, 1889; Chicago, October 1, 1896; and Berwyn, Pa., November 29, 1894. Other fall records are Cambridge, Mass., September 30 and October 2; Lynchburg, Va., September 22, 1898; Chester County, S. C., October 21, 1887; Charleston, S. C., November 27; Key West, October 5; San Angelo, Tex., September 4, 1885; and San Pedro River, Arizona, near the Mexican boundary, October 11, 1892. By the last of November the species has become common at the southern limit of its winter range.

This warbler makes no migration by water, so far as known, but reaches its winter home entirely overland.

646a. Helminthophila celata lutescens (Ridgw.). Lutescent Warbler.

This Pacific slope form of the orange-crowned warbler breeds from southern California to southern Alaska and east to the mountains of Nevada. It winters southward from central California, and has been found in winter by the parties of the Biological Survey throughout western Mexico in Chihuahua, Sinaloa, Jalisco, Colima, and Morelos, and from the coast to interior points 6,000 feet above sea level. The lutescent warbler arrives about March 12 in central California, and about March 23 in northern Oregon. It was noted at Chilliwack, British Columbia, April 17, 1889. In the Huachuca Mountains of Arizona during 1902 the bird appeared April 8 and departed May 5. The average date of arrival for five years at Columbia Falls, Mont., is May 5, and the earliest, April 30, 1897.

646b. **Helminthophila celata sordida** Towns. Dusky Warbler.

A resident form on the Santa Barbara Islands, California, known also to have occurred on the mainland at Pasadena.

647. **Helminthophila peregrina** (Wils.). Tennessee Warbler.

Breeding range.—The Tennessee warbler is common in migration in the Mississippi Valley, but is rather rare east of the Allegheny Mountains. It occurs in summer in northern New England, and has also been noted in northern New York and northeastern Minnesota. It ranges north to the upper Yukon Valley, eastern British Columbia, Nahanni River and Fort Wrigley in Mackenzie, Quebec, Labrador, and the Gulf of St. Lawrence. An accidental occurrence has been noted in California. During the summer of 1901 one of the parties of the Biological Survey took two sets of eggs at Fort Smith, Mackenzie. These eggs are among the first absolutely authentic specimens known to science.

Winter range.—During the winter this warbler is rather common in northern Guatemala, and one of the parties of the Biological Survey found it at an elevation of 10,000 feet on the volcano of Santa Maria where it was quite common, January 21–28, 1896. It was taken by Sumichrast at Sta. Efigenia, Oaxaca, Mexico, January 3 and 14, 1869, and was previously found by Boucard in the same State. It has twice been noted at Jalapa, Vera Cruz. The only Yucatan record is from the island of Cozumel. The only Honduras records are from San Pedro near the northwest coast, and the islands of Bonacca and Ruatan somewhat farther east. These records, taken in connection with the fact that the Tennessee warbler is abundant in fall on the southeastern coast of Nicaragua and occurs in Costa Rica and Panama, seem to show that the bird migrates along the Atlantic side of Central America. But for the present there is nothing to indicate that it passes inland to the mountainous districts of Honduras or Nicaragua, or that there is any southeastward migration along the mountains from Guatemala to Costa Rica.

In Colombia, South America, the Tennessee warbler has been taken in the fall on the north coast at Bonda,[a] and during the winter in the mountains of the Santa Marta region at Minca (2,000 feet),[b] Onaca (2,500 feet),[a] Valparaiso (4,500–5,500 feet),[a] and Las Nubes (5,000 feet).[a] It is reported from Bucaramanga (3,000 feet),[c] and in the same vicinity at Herradura (4,000 feet).[a] One of the highest recorded altitudes is Concordia (6,000 feet)[b] in Antioquia. Other records in South America are at Santa Marta, Colombia,[c] and at Caracas, Venezuela.[d] One of Boucard's specimens in the National Museum is marked "Merida, Venezuela, 1889." The winter records are made almost entirely in the mountains, but not nearly at such high altitudes as one might expect from the boreal habit of the bird in the United States and Canada.

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[a] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 178, 1900; Auk, XVII, p. 367, 1900.

[b] Salvin and Godman, Ibis, p. 117, 1880.

[c] Berlepsch, J. f. Orn., p. 282, 1884.

Spring migration.—In spring migration the Tennessee warbler is rarely found east of the Alleghenies, nor is it so common in the Mississippi Valley as during the fall migration. It is one of the late migrants, reaching latitude 37° about April 27, as shown by the following dates of arrival: Rising Fawn, Ga., April 26, 1885; southwestern Missouri, April 27, 1874; Acton, Ky., April 29, 1901; and St. Louis, April 25, 1882, April 25, 1883, April 29, 1884, April 28, 1885, April 24, 1886, April 28, 1887, and April 27, 1888—average, April 27. Northern records of average date of arrival are: Beaver, Pa., May 9; central New York, May 13; eastern Massachusetts, May 14; Brookville, Ind., May 4; Chicago, May 9; southern Wisconsin, May 16; southern Michigan, May 15; Ottawa, May 16; Grinnell, Iowa, May 5, and Lanesboro, Minn., May 11.

The Biological Survey has received no notes from the South Atlantic States on the spring migration of the Tennessee warbler, nor from Alabama, Mississippi, or Louisiana, though two birds were seen in April in Cuba[e] and some were taken on the island of Grand Cayman,[f] and the species has been noted several times in spring at Pensacola, Fla. The few notes from farther west indicate the arrival of the bird at Corpus Christi, Tex., April 3, 1891; Bee County, Tex., April 18, 1887; San Antonio, Tex., April 21, 1891; Manhattan, Kans., May 2, 1893; Lincoln, Nebr., May 7; Aweme, Manitoba, May 13, 1903; Fort Simpson, Mackenzie, May 26, 1860, and Caribou, British Columbia, May 22, 1901. Six records have been made of the occurrence of this species in Colorado, where during the early days of May, at the western limit of its range, it is a rare migrant along the base of the eastern foothills.

The latest dates of departure south of the United States are at Valparaiso, Colombia, April 4; Minca, Colombia, March 26; San José, Costa Rica, March 6, 1889; and Jalapa, Vera Cruz, April 18, 1897. The latest at St. Louis, Mo., were May 21, 1884, May 22, 1885, May 15, 1886, May 14, 1887, and May 20, 1888.

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[a] Wyatt, Ibis, p. 322, 1871.

[b] Sclater and Salvin, P. Z. S., p. 494, 1879.

[c] Bangs, Proc. Biol. Soc. Wash., XII, p. 143, 1898.

[d] Sharpe, Cat. Birds, Brit. Mus., X. p. 242, 1885.

[e] Gundlach, J. f. Orn., p. 412, 1872.

[f] Cory, Cat. W. I. Birds, p. 117, 1892.

Fall migration.—The Tennessee warbler begins to move southward in August from its summer home. It was noted at Hallock, Minn., August 2, 1899; Mackinac Island, Michigan, August 8, 1889; Chicago, August 13, 1896; Englewood, N. J., August 26, 1887; and Washington, August 31, 1890. Arrivals of the earliest southbound migrants were recorded at Asheville, N. C., September 13, 1890, and September 10, 1894. In Chester County, S. C., in eleven years' observation, the earliest date of arrival from the north was September 8.

Few Tennessee warblers pass through Florida to the West Indies. Two specimens were taken on October 5 and 6, 1887, at Key West, but there are no other records of the occurrence of the species in southern Florida. The bird, however, undoubtedly passes regularly through western Florida, as it does through Mississippi and Louisiana. At Eubank, Ky., the earliest record of a fall migrant was September 9, 1887. The earliest birds were seen at New Orleans September 23, 1896, September 22, 1897, and September 18, 1899. Some individuals pass through eastern Texas into Mexico, and migrants have been taken at Jalapa, Vera Cruz.[a] The species was taken in September on the island of Bonacca, Honduras,[b] and on the coast of southeastern Nicaragua, October 24, 1892.[c] Several Tennessee warblers were seen at San José, Costa Rica, September 17, 1889, the next noted in that year arriving October 14. The earliest arrival in the following year was on October 20.[d] Von Frantzius records that he saw the Tennessee warbler in August in Costa Rica, but if there was no mistake in identification, the occurrence must have been accidental. The earliest date of arrival at Bonda, on the north coast of Colombia, is November 3.[e] These records show that the principal line of migration is from the Mississippi Valley across the Gulf of Mexico to Mexico and Central America. The eastern part of this route probably extends from the southern end of the Alleghenies across northwestern Florida to the coast of Yucatan and Honduras.

The Tennessee warbler is quite slow in leaving the United States. As late as October it occurs throughout the whole of the eastern part of the United States, from the Great Lakes to the Gulf. Though it leaves the northern part of this region early in the month, it lingers in the southern part until its close. Some records of latest departure are: Aweme, Manitoba, October 3, 1901; Grinnell, Iowa, October 1, 1886; Ottawa, September 30, 1889; Palmer, Mich., September 27, 1894; Chicago, October 9, 1894; Beaver, Pa., October 11, 1890; Washington, October 12, 1890; St. Louis, October 20, 1885; Asheville,

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[a] Chapman, Bull. Am. Mus. Nat. Hist., X, p. 24, 1898.

[b] Salvin, Ibis, p. 247, 1888.

[c] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893.

Cherrie, Auk, VII, p. 335, 1890; Auk, VIII, p. 278, 1891.

Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 178, 1900.

N. C., October 29, 1894, and New Orleans, October 30, 1894, November 1, 1895, October 27, 1896, October 21, 1897, October 25, 1899, and November 3, 1900. This protracted migration is quite different from that noted on the coast of Nicaragua. Richmond reports that in 1892 the first arrivals were noted October 24; that two days later the birds were very abundant; that during the next three days hundreds were seen daily, and that after this none were seen. At San José, Costa Rica, where Tennessee warblers are common all through the winter, they were reported as abundant by October 27. The fact also that the species was seen in Costa Rica by September 17 in 1889 would indicate that migration over this part of the route is quite rapid.

648. Compsothlypis americana (Linn.). Parula Warbler.
648a. Compsothlypis americana usneæ Brewster. Northern Parula Warbler.

Present knowledge of the parula warbler does not allow separate treatment of the two forms, *americana* and *usneæ*, as regards winter range or migration, but the boundaries of the breeding ranges can be defined from information already secured.

Breeding range.—The southern form of the parula warbler, true *americana*, breeds locally in the Gulf States from Alabama to Florida and more commonly up the Atlantic slope to the District of Columbia and probably also in Delaware and southern New Jersey. Individuals have been taken casually in Pennsylvania and New York. The range thus practically coincides with the Austroriparian zone, and its northern limits with those of the Spanish moss, in whose festoons *americana* commonly nests.

The northern parula warbler—including under this head the individuals that have lately been segregated as the subspecies *ramalinæ*—breeds commonly in the northeastern part of the United States as far north as Maine, and rarely visits or breeds in New Brunswick, Nova Scotia, and Prince Edward Island. It is common in the Alleghenies, and ranges up to 2,700 feet in the Catskills and the higher mountains of Pennsylvania and Virginia. Along the northern limit of its range it is rare in southern Ontario, southern Michigan, and across Wisconsin to southeastern Minnesota. It is recorded from Mackinac Island in northern Michigan, and is one of the warblers that has struck the light-house near there on Spectacle Reef. It is reported as breeding in St. Louis County, northeastern Minnesota. Its regular range extends westward across Iowa to southeastern Nebraska, and thence southward through Indian Territory to Texas. It has been taken casually in the Black Hills of South Dakota and twice in Wyoming, and is a rare visitant in southeastern Colorado.

Winter range.—The range in Mexico of the species as a whole has been accurately determined by the parties of the Biological Survey. They found it wintering abundantly in southern Vera Cruz, Tabasco, Campeche, and Yucatan, both on the coast and in the lower districts. It is found sparingly southwest to Oaxaca and reaches the Pacific slope at Tehuantepec City. It is not common in winter in northern Vera Cruz, though it has been taken even farther north at Alta Mira, Tamaulipas,[a] February 16, 1895, and a few have been seen in winter at Tampico, Tamaulipas.[b] It is found on the islands off the east coast of Yucatan, the islands of Ruatan and Bonacca, Honduras,[c] and the Swan Islands.[d] It ranges southward to the table-lands of northern Guatemala as far as Coban, but there are no records of its occurrence in southern Guatemala, in Costa Rica, or in South America. The southernmost records are of specimens taken during the winter of 1886–87 on the island of Old Providence off the coast of Nicaragua,[e] and on October 26, 1892, in southeastern Nicaragua.[f] The bird has a wide range through the West Indies. It is abundant in Cuba, occurs throughout the Bahamas and all of the Greater Antilles, and is known from St. Croix, St. Thomas, St. Eustatius, St. Christopher, Guadeloupe, and Barbados of the Lesser Antilles. It winters abundantly in the southern Bahamas, regularly in southern Florida, and irregularly north to central Florida.

Spring migration.—After spending fully five months in its winter home the parula warbler starts on its northward journey. The earliest records of striking at the Sombrero Key lighthouse are March 3 and 7, 1887, March 10 and 11, 1888, and March 3 and 11, 1889. The flights of March, 1887, were light, and those of March, 1888, medium, while that of March 3, 1889, was one of the heaviest ever witnessed at Sombrero Key lighthouse. Many parulas were seen around Perdido lighthouse, northwest Florida, March 22, 1885, and the earliest migrants arrived the previous day at Pensacola, Fla. The average date of arrival for four years at Frogmore, S. C., is March 23, and that for seven years at Raleigh, N. C., April 8.

Other records of average dates of arrival are: Frenchcreek, W. Va., April 22; Washington, April 26; Beaver, Pa., April 30; Germantown, Pa., May 1; Renovo, Pa., May 5; Englewood, N. J., May 4; southeastern New York, May 2; central New York, May 8; central Connecticut, May 6; Boston, May 8; St. Johnsbury, Vt., May 9; southern New Hampshire, May 9; southern Maine, May 10; Quebec, May 14; southern New Brunswick, May 15. The first arrival was noted at Pictou, Nova Scotia, May 23, 1891, and at North River, Prince Edward Island, May 30, 1890. The average of many years' observation in

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[a] Richmond, Proc. U. S. Nat. Mus., XVIII, p. 631, 1896.

[b] Renardo, O. & O., XI, p. 118, 1886.

[c] Salvin, Ibis, p. 247, 1888.

[d] Ridgway, Proc. U. S. Nat. Mus., X, p. 575, 1888.

[e] Cory, Auk, IV, p. 180, 1887.

[f] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893.

Ontario gives the usual date of arrival as May 6 in southern Ontario, May 10 in the Parry Sound district, and May 13 at Ottawa.

The record of this warbler in the West is very interesting. The dates of first arrivals in spring in Texas are as follows: Vicinity of the lower Rio Grande, March 20, 1877, March 18, 1887, March 13, 1897; Refugio County, March 13, 1899; San Antonio, March 26, 1889, March 18, 1890, March 25, 1891; a few miles northwest of San Antonio, March 20, 1880, March 25, 1900, March 22, 1901; Austin, March 13, 1890, March 18, 1893; Waco, March 10, 1900; Dallas, March 16, 1898, March 17, 1899. Those for Louisiana are of a quite different sort, as is shown by the following table giving dates of first and second arrivals noted and those on which the species became common:

Spring records of parula warbler.

Place and year.	First seen.	Next seen.	Common.
Houma, La., between New Orleans and the Gulf:			
1887	Feb. 28	Feb. 29	Mar. 7
1888	Mar. 7	Mar. 8	Mar. 13
1890	Mar. 12	Mar. 13	Apr. 1
New Orleans:			
1893	Feb. 22	Mar. 10	Mar. 18
1894	Mar. 4		Mar. 11
1895	Mar. 9	Mar. 16	Mar. 16
1896	Mar. 3	Mar. 5	Mar. 7
1897	Mar. 5	Mar. 8	Mar. 9
1898			Mar. 12
1900	Mar. 8	Mar. 9	Mar. 10
1901	Mar. 10		Mar. 24
Average	Mar. 5	Mar. 9	Mar. 14

The records show the average date of movement through Florida on the east, Texas on the west, and Louisiana in the center. A comparison of the dates shows, first, that the parula warbler arrives in Texas much later than in either of the other States, and hence does not reach the Mississippi Valley by way of Texas; second, that it arrives in northern Florida at least ten days later than it attains the same latitude in Louisiana. From these two facts it would appear that Louisiana is reached by direct flight across the Gulf of Mexico. The average date of arrival at New Orleans coincides closely with the date when the first migrants arrive at the southern end of Florida. It would seem that the birds of Mexico and Cuba are prompted to move northward at the same time, but the flight over the Gulf of Mexico being so much longer than that from Cuba to Florida, the Mexican birds reach a higher latitude by their initial flight.

The further migration northward in the Mississippi Valley is at a much slower rate. The species consumes an average of twenty-eight days in advancing from New Orleans to Helena, Ark. The later migrants through Florida move more rapidly, and from the latitude of Helena northward the migration in the Mississippi Valley is but five days earlier than in corresponding latitudes on the Atlantic coast.

This slow migration from New Orleans to Helena is noted in several species, and seems to be due to the resting of the birds for several days near the Gulf coast after their long flight.

The average date of arrival at Helena for five years (1896–1901) is April 2, with extremes of March 30, 1896 and 1897, and April 7, 1901. The average date of arrival at St. Louis is April 12, with extremes of April 10, 1887, and April 17, 1885. The average of arrival at Waterloo, Ind., is May 1; Chicago, May 8; Grinnell, Iowa, May 8; Lanesboro, Minn., May 9.

The Texas records are also noteworthy. It is evident that there is no regular progression from south to north. At a moderate rate of speed it would take most species from ten to fifteen days to cross the State, and yet the northern dates are on the whole earlier than the southern. The explanation seems to be that the earlier birds in northern Texas have flown across the Gulf to the upper part of the Texas coast and moved inland from that point instead of crossing the Rio Grande.

The influence of altitude on bird migration is well illustrated by the passing of parulas through Raleigh and Asheville, N. C. The latitude of the two places is the same, but Raleigh is 300 feet above sea level and Asheville 2,000. The records of spring migration at these two points are as follows:

Records of migration of parula warbler in North Carolina.

Place and year.	First seen.	Next seen.	Common.
Raleigh:			
1890	Apr. 3	Apr. 9	Apr. 21
1891	Apr. 13	Apr. 14	Apr. 23
1892	Apr. 4	Apr. 5	Apr. 25
1893	Apr. 5	Apr. 12	Apr. 14
1894	Apr. 6	Apr. 7	....
Average	Apr. 6	Apr. 10	Apr. 21
Asheville:			
1890	Apr. 12	Apr. 13	Apr. 15
1891	Apr. 19	Apr. 20	Apr. 20
1892	Apr. 18	Apr. 19	Apr. 22
1893	Apr. 9	Apr. 10	Apr. 11
1894	Apr. 18	Apr. 19	Apr. 21
Average	Apr. 15	Apr. 16	Apr. 19

As would be expected, the birds appear in the mountains later than on the plains, and it is considered that this is due to the effect of the higher altitude of Asheville. In the following case, however, there is no such effect apparent. The town of Eubank, Ky., is 200 miles north of Helena, Ark., and 85 miles south of St. Louis. It is at an altitude of 1,000 feet and therefore 600 feet higher than St. Louis and 800 feet higher than Helena. The average date of arrival of the parula warbler at Eubank for the eight years 1887 to 1895 is April 9, with extremes of April 4, 1892, and April 14, 1887. This date is three days earlier than the average at St. Louis and seven days later than that at Helena, or, in other words, the dates of arrival at the three places correspond exactly, latitudinal differences considered, showing no effect of the 800 feet difference in altitude. It should be remarked, however, in this connection that there is no height of land between Eubank, Ky., and the Louisiana coast to check or turn the course of migration, while Asheville, N. C., is separated from the coast by a considerable range of mountains.

The parula warbler was found to be abundant in northwestern Yucatan March 17, 1890.[a] It has been found until April on the islands off the coast of Yucatan.[b] It is said to remain in Cuba until April only,[c] but the Florida lighthouse records show that not all individuals leave their winter home until early May. The latest dates of striking at Sombrero Key lighthouse are May 11, 1886, May 4, 8, 9, and 15, 1888, and May 29, 1889.

With this, as with several other species, the few notes on record indicate a later date of migration through the northern Bahamas than at corresponding latitudes in Florida. No parulas were seen in 1890 on Andros Island until March 26;[d] a wave of migrants passed April 18, and in 1898 on a neighboring island the last bird was seen April 30.[e]

Fall migration.—The earliest fall movements of the parula warbler on land can not be noted, for the migrants are not distinguishable from the breeding birds. When, however, the species begins to strike against the lighthouses of southern Florida, it is certainly migrating. It passes through Florida in countless thousands, being second only to the black-throated blue warbler in the frequency with which it strikes the lighthouses. Out of eighty-eight recorded dates of the striking of parulas in fall only eight are earlier than the second week in September, viz: August 9 and 12, 1885, July 28 and 29, and August 21, 1886, and August 22, 23, and 24, 1889. At Key West the first striking of parulas noted occurred on July 30, 1888, and August 4, 1889. By the middle of September the great flights begin and continue in full force for a month. The numbers decrease later, but the birds continue to pass until at least the middle of November. Some late dates are November 5, 8, 10, 12, and 13, 1884; November 12, 1885; November 20, 1887; November 5, 10, and 11, 1888, and November 7, 1891. Gundlach's records in Cuba correspond with the foregoing for he says that this species arrives in August, but in greater numbers in September. It reaches Jamaica early in September, and has been taken about the same time off the coast of Honduras.

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[a] Stone, Proc. Acad. Nat. Sci. Phil., p. 210, 1890.

[b] Salvin, Ibis, p. 247, 1888.

[c] Gundlach, J. f. Orn., p. 411, 1872.

[d] Northrop, Auk, VIII, p. 67, 1891.

[e] Bonhote, Ibis, p. 508, 1899.

Some records of latest birds seen are: Grinnell, Iowa, September 21, 1887; Mackinac Island, Mich., September 2, 1889; Chicago, October 1, 1897; Toronto, September 28, 1898; Ottawa, September 13, 1889; North River, Prince Edward Island, August 25, 1890; St. John, New Brunswick, September 17, 1889; Pittsfield, Me., September 30, 1898; Hartford, Conn., October 20, 1900; southeastern New York, October 12, 1891; Berwyn, Pa., October 31, 1893. The latest recorded southward migrants passed Raleigh, N. C., October 14, 1890, and October 13, 1891, and Asheville, N. C., October 5, 1891. The average of the dates on which the last fall migrant was noted is October 9 at Raleigh and September 29 at Asheville. At Eubank, Ky., the last migrant recorded passed south September 18, 1889, and at New Orleans, October 26, 1899; the average of last dates at New Orleans is October 18.

649. Compsothlypis pitiayumi nigrilora (Coues). Sennett Warbler.

The Sennett warbler breeds in Texas along the lower Rio Grande and in Mexico in Coahuila, Nuevo Leon, Tamaulipas, and San Luis Potosi. It winters at least as far north as Nuevo Leon, and has been taken in the last week of February, 1880, on the Rio Grande near Hidalgo.

650. Dendroica tigrina (Gmel.). Cape May Warbler.

Breeding range.—A few Cape May warblers breed in the mountains of Jamaica, as attested by specimens in the National Museum, but the rest pass northward through the northern Bahamas, Florida, and eastern United States to their summer home. The species, apart from the singular Jamaican exceptions, is confined strictly to the Canadian life zone, the breeding range extending from northern New England, northern Michigan, and northern Minnesota north to New Brunswick, Nova Scotia, Hudson Bay, and nearly to Great Slave Lake.

Winter range.—The Cape May warbler makes its principal winter home in the West Indies, with its center of abundance at Haiti. It has been taken as far north as Rum Cay in the center of the Bahamas, and as a rare or accidental winter species at Key West, Fla. Its winter range extends to the islands of Jamaica, St. Croix, St. Thomas, Guadeloupe,[a] and Tobago.[b] To the southwest, except for a single individual taken in northern Yucatan[c] and another on the island of Ruatan,[d] the species is unrecorded; and as the general course of migration is southeastward, both of these records are probably unusual.

Spring migration.—Some records of spring arrival of the species are as follows: Nassau, Bahamas, March 22, 1890; New Providence,

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[a] Lawrence, Proc. U. S. Nat. Mus. VIII, p. 621, 1885.

[b] Sharpe, Cat. Birds Brit. Mus. X, p. 337, 1885.

[c] Boucard, P. Z. S., p. 440, 1883.

[d] Salvin, Ibis, p. 251, 1888.

Bahamas, March 19, 1891; Tortugas, April 8, 1890; Sombrero Key lighthouse, Fla., April 4, 1889; Key West, Fla., April 11, 1887; Puntarasa, Fla., April 16, 1886; Gainesville, Fla., April 14, 1887; Tarpon Springs, Fla., April 17; Daytona, Fla., April 14, 1901; near mouth of Suwanee River, Florida, April 15, 1892. An unusually early individual struck Sombrero Key lighthouse March 3, 1887, a night that witnessed an enormous flight of birds of many kinds for most of whom the flight was one to three weeks earlier than usual. It would seem that these flocks of birds were caught in a storm, driven out of their course, and carried north to Florida. The average of the dates on which the earliest spring migrant was seen in five years at Kirkwood, Ga., was April 26, with extremes of April 20, 1901, and April 30, 1897. At Rising Fawn, Ga., the only bird noted arrived on April 26, 1885. At Asheville, N. C., May 5, 1893, May 7, 1894, and May 5, 1899, represent the first arrivals and show the effect of the altitude, as these dates are about simultaneous with the date of usual appearance of the bird at Washington, 175 miles farther north. The average date of arrival in southeastern New York is May 12. The first arrival was noted at Montreal May 14, 1890; Quebec, May 16, 1902, and Scotch Lake, New Brunswick, May 17, 1901. Thus, the Cape May warbler makes an average daily speed of 28 miles from Florida to its breeding grounds. Records of average date of arrival farther west are: Brookville, Ind., May 5; Chicago, May 6; northern Ohio, May 7; southern Wisconsin, May 11; Ottawa, May 15; Lanesboro, Minn., May 16; and Elk River, Minn., May 20. The first arrival was noted at Aweme, Manitoba, May 14, 1900, and at Medicine Hat, Assiniboia, May 17, 1894.

The western limit of the range of the species can be marked approximately by a line drawn from Florida to southern Missouri and up the Mississippi River to Minnesota. There is a single record of occurrence in Louisiana, probably accidental, and less than half a dozen in the United States west of the Mississippi south of Minnesota.

As already remarked, some Cape May warblers breed in Jamaica, but the bulk of the species leave the southern part of their range by the latter part of March. Some late dates of final departure for the North are: St. Croix, March 16; Haiti, April 6; Andros Island, April 20, 1890; Tortugas, April 27, 1890; Cuba, May 2, 1900; Key West, May 4, 1887, and Asheville, N. C., May 15.

Fall migration.—The average date of appearance of fall migrants at both Chicago and Washington is August 26. Since these places are about 500 miles south of the nesting grounds, it follows that the southernmost breeding birds begin their migration not later than August 10. The earliest recorded date of fall arrival at St. Louis is August 24, 1887; at Asheville, N. C., September 15, 1894; in Chester County, S. C., October 4; at Puntarasa, Fla., October 6, 1886. The species struck the Sombrero Key lighthouse October 7 and 8, 1886, and October 7, 1887. Some very early dates of striking are September 17 and 18, 1887. The heaviest flights noted occurred October 16 and 17, 1887. On these two nights about 50 individuals altogether struck the light, and 6 were killed.

In the latitude of Washington and St. Louis the last fall migrants are seen about October 7–12, and at Key West the latest reported passed southward November 1, 1887. The latest date of striking at Sombrero Key lighthouse is November 4, 1887. The Fowey Rocks lighthouse, on the southeast coast of Florida, in line with migration to the Bahamas, was struck November 1, 2, and 7, 1891. A belated migrant was shot at Cleveland, Ohio, November 2, 1885.

651. **Dendroica olivacea** (Giraud). Olive Warbler.

The olive warbler breeds in central Mexico and in southern Arizona whence it retires in winter to Mexico where it occurs on the highlands from 5,000 to 10,000 feet. It has also been taken in Guatemala from 6,000 to 10,000 feet. Possibly a few may winter in southern Arizona where one was taken February 21. The arrival of the first was noted April 6, 1902, in the Huachuca Mountains, Arizona.

652. **Dendroica æstiva** (Gmel.). Yellow Warbler.

Breeding range.—If a map of the United States and Canada south of the Barren Grounds was colored to represent the breeding area of the yellow warbler, the uncolored portions would comprise Florida, southern Georgia, and numerous small 'islands' representing the upper parts of the eastern mountains and such parts of the western mountains as are above 6,000–8,000 feet. The summer range of the bird, including the range of the subspecies *sonorana* in the southwestern part of the United States and that of *rubiginosa* in Alaska, covers approximately 40° of latitude—30° to 70°—and 110° of longitude—55° to 165°. The winter range covers 31° of latitude—24° N. to 7° S.—and 54° of longitude—52° to 106°. The two in combination thus give an extension of 77° of latitude and 113° of longitude.

The extreme points of the yellow warbler's range—northern Alaska and western Peru—are farther separated than the extremes of the range of the black-poll warbler, which is considered the greatest migrant of the family. Owing, however, to the southerly extension of the breeding range of the former, it is likely that the longest migration trips of black-polls exceed those made by any yellow warblers.

Winter range.—The yellow warbler has been taken in central Peru at La Merced[a] (2,600 feet), and at Iquitos[b] in the extreme northeastern province; in Ecuador at Guayaquil[a] and Esmeraldas[b] on the west coast, and at Archidona[c] and Sarayacu[d] in the central part near the foot of the eastern Andes, also at La Concepcion[e] and Valle del Chota;[e] in northern Brazil on the Rio Tacutu,[f] and in the valley of the Amazon;[g] in Dutch Guiana;[h] in French Guiana at Cayenne;[i] in British Guiana at Georgetown,[j] Bartica Grove,[k] and the River Berbice;[i] in Venezuela[l] at Carupano,[m] and on the south side of Lake Valencia;[n] on the island of Trinidad;[o] and at many localities in the valleys of the Orinoco and Caura[p] rivers. Most of these places are near the coast and of little altitude, but the captures in eastern Peru and central Ecuador show that the species passes far into the interior, though not to the greater altitudes. In the State of Colombia, where the bird is common in winter, it ranges somewhat higher. It is abundant on the coast at Bonda,[q] and has been taken in the Santa Marta region at Minca[r] (2,000 feet) and Santa Marta.[s] It has also been secured in the interior at Bucaramanga[t] (3,000 feet), Ocana[u] (3,700 feet), and Medellin[v] (5,000 feet). Specimens occur in many of the Bogota[w] collections, but are not accompanied with information showing the altitudes at which they were taken. The yellow warbler is one of the commonest species of Central America[x] in winter, and occurs on both coasts and in the interior up to an altitude of 4,000–6,000 feet. It also occurs in winter in

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[a] Berlepsch and Stolzmann, P. Z. S., p. 331, 1896.

[b] Taczanowski, Orn. Per., III, p. 507, 1886.

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[a] Sharpe, Cat. Birds Brit. Mus., X, p. 275, 1885.

[b] Sclater, Cat. Am. Birds, p. 32, 1862.

[c] Goodfellow, Ibis, p. 314, 1901.

[d] Sharpe, Cat. Birds Brit. Mus., X, p. 644, 1885.

[e] Salvadori and Festa, Boll. Mus. Univ. Torino, XV, No. 357, p. 8, 1899.

[f] Pelzeln, Orn. Bras. 71, 1869.

[g] Goeldi, Aves Bras., p. 269, 1894.

[h] Abbott, Proc. Bos. Soc. N. H., I, p. 171, 1844.

[i] Sharpe, Cat. Birds Brit. Mus., X, p. 275, 1885. Sclater, Cat. Am. Birds, p. 32, 1862.

[j] Quelch, Timehri, V, p. 79, 1891; X, p. 261, 1896. Loat, Ibis, p. 566, 1898. Lloyd, Timehri, XI, p. 228, 1897.

[k] Salvin, Ibis, p. 202, 1885.

[l] Cabanis, Mus. Heine, Pt. I, p. 19, 1850.

[m] Allen, Bull. Am. Mus. Nat. Hist., IV, p. 51, 1892.

[n] Sclater and Salvin, P. Z. S., p. 251, 1869. Ernst, Rev. Cient. Univ. Venez., 1, p. 33, 1887; Flora & Fauna Venez. 301, 1877.

[o] Chapman, Bull. Am. Mus. Nat. Hist., VI, p. 24, 1894. Salvin, Cat. Strick. Coll. p. 91, 1882.

[p] Berlepsch & Hartert, Nov. Zool., IX, p. 9, 1902.

[q] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 177, 1900; Auk, XVII, p. 366, 1900.

[r] Salvin and Godman, Ibis, p. 117, 1880.

[s] Bangs, Proc. Biol. Soc. Wash., XII, p. 143, 1898.

[t] Berlepsch, J. f. Orn., p. 282, 1884.

[u] Wyatt, Ibis, p. 322, 1871.

[v] Sclater and Salvin, P. Z. S., p. 494, 1879.

[w] Sclater, P. Z. S., p. 143, 1855.

[x] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893. Nutting, ibid., VI, p. 382, 1883. Underwood, Ibis, p. 433, 1896. Cherrie, Auk, VII, p. 335, 1890.

Yucatan (though much more commonly in spring migration), and also in Chiapas. During the spring migration it is common on the coast of Tabasco and Vera Cruz. The western extension of its winter range in Mexico can not be determined from present records and material, as these are insufficient to distinguish *æstiva* from the various subspecies it meets in Mexico—*rubiginosa* from Alaska, *sonorana* from Arizona, and the local race, *dugesi*, from Guanajuato and the central plateau region.

There is a single record of the capture of the yellow warbler on the island of Grenada[a] November 14, 1882. This is the only certain record of the occurrence of the bird in the West Indies, where closely allied resident species occupy its favorite localities. This division of districts between the resident and the migrant species is especially noticeable on the north coast of Honduras, where *D. æstiva* occurs on Ruatan Island[b] and on the mainland at Truxillo,[c] but seems not to visit the neighboring island of Bonacca, which is occupied by *D. bryanti.*

Spring migration.—The yellow warbler is not an early spring migrant, and is one of the most irregular of the family in its movements. There is no record of the bird in spring in Florida. It arrives in Alabama, Georgia, and South Carolina no earlier than in North Carolina, as is shown by the following dates of earliest spring records: Coosada, Ala., April 26, 1878; Greensboro, Ala., April 14, 1888; Shelby, Ala., April 25, 1898; Darien, Ga., April 28, 1890; Savannah, Ga., April 16, 1894; Kirkwood, Ga., April 23, 1899, April 10, 1900, April 17, 1901; Frogmore, S. C., April 17, 1885. The average date of arrival at Raleigh, N. C., for eight years was April 12, and the earliest date April 5, 1888. At Asheville, N. C., in the mountains, the average date was about three days later than at Raleigh. Quite voluminous records show that yellow warblers arrive on the average at Newmarket, Va., April 22; Washington, April 20; Beaver, Pa., April 23; Renovo, Pa., April 30; Englewood, N. J., and southeastern New York, May 1; central Connecticut, Providence, R. I., and Boston, May 4; Randolph, Vt., May 9; southern New Hampshire, May 10; southern Maine, May 11; Montreal, May 10; Quebec, May 15; St. John, New Brunswick, May 24; Chatham, New Brunswick, May 28; Pictou, Nova Scotia, May 14; Halifax, Nova Scotia, May 14; North River, Prince Edward Island, May 25; Hamilton River, Quebec, May 31.

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[a] Wells, Proc. U. S. Nat. Mus., IX, p. 611, 1886 (*D. petechia=D. æstiva*).

[b] Salvin, Ibis, p. 247, 1888.

[c] Ridgway, Proc. U. S. Nat. Mus., X, p. 579, 1888.

Records from the Mississippi Valley are given in tabular form:

Mississippi Valley records of arrival of yellow warbler.

Year.	New Orleans and vicinity.	Helena, Ark.	Eubank, Ky.	St. Louis, Mo.	Onaga, Kans.
1884				Apr. 19	
1885	Apr. 9			Apr. 18	
1886	Apr. 12			Apr. 19	
1887				Apr. 20	
1888	Apr. 2			Apr. 15	
1889	Apr. 6		Apr. 12		
1890	Apr. 5		Apr. 14		
1891			Apr. 15		Apr. 26
1892	Apr. 1		Apr. 18		Apr. 28
1894			Apr. 17		Apr. 26
1895	Apr. 6	Apr. 21	Apr. 20		Apr. 26
1896	Apr. 4				Apr. 23
1897		Apr. 18			Apr. 24
1898	Apr. 2				Apr. 29
1899	Apr. 3	Apr. 16			
1900	Apr. 8	Apr. 23			Apr. 22
1901	Apr. 9	Apr. 14			Apr. 25
Average	Apr. 6	Apr. 18	Apr. 16	Apr. 18	Apr. 25

Records of average date of arrival farther north are: Brookville, Ind., April 15; Waterloo, Ind., April 25; Wauseon, Ohio, April 26; Cleveland, Ohio, April 28; southern Ontario, May 1; Ottawa, May 7; Petersburg, Mich., April 26; Chicago, May 2; southern Wisconsin, May 6; Keokuk, Iowa, April 30; Grinnell, Iowa, May 1; Lanesboro, Minn., May 7; Aweme, Manitoba, May 14. The birds of the Rocky Mountains arrive considerably later than at corresponding latitudes in the East. Arrival in Colorado is principally during the second week of May; at Cheyenne, Wyo., on May 11; Terry and Great Falls, Mont., May 16. Other records in the far North are: Osler, Saskatchewan, May 17, 1893; Red Deer, Alberta, May 16, 1893; Pelican Rapids, Athabasca, May 18, 1903; near Lake Athabasca, May 17, 1901; Fort Chippewyan, May 24, 1893; Fort Simpson, May 26, 1861, and May 21, 1904.

The records of arrival of the yellow warbler in Texas are important as bearing on the general problem of migration routes in the State, and are as follows: Corpus Christi, April 22, 1891; Refugio County, April 17, 1899; San Antonio, April 15, 1890, and April 16, 1891; Austin, April 16, 1893; Dallas, April 12, 1898, and April 15, 1899; Bonham, April 9, 1885, April 10, 1886, April 8, 1887, April 8, 1889, April 14, 1890, and April 15, 1891, and Gainesville April 18, 1886, and April 13, 1889.

Some late spring records south of the United States are as follows: Central Ecuador, common in April; Costa Rica, May 1; Vera Cruz, May 6–10, 1894; Cozumel Island, April 18, 1901.

Fall migration.—The striking characteristic of the records of the fall migration of the yellow warbler is their earliness. Along the eastern line of migration southward migrants have been noted in central Florida July 20, and by the last week in July the birds are in full tide of migration at New Orleans. Fall migrants have been recorded at the following places on the dates named: Key West, July 26, 1889; southeastern Nicaragua, August 9, 1892; San José, Costa Rica, August 25, 1889, and August 24, 1890; Bonda, Colombia, August 27, 1898.

Cherrie says of yellow warblers migrating through Costa Rica:

> They made their first appearance in the fall of 1889, August 25, on which date a number were seen. Those taken were very fat. From this date they were common, and by September 17 abundant. Then the numbers seem to have diminished, until during October, November, December, and January they were only tolerably common. During the latter part of January and the first of February they were the most common warbler in the vicinity of San José. From this time they were common until the first of May. None of those taken last showed any signs of breeding.[a]

The bulk of the birds pass southward soon after the early migrants. Following are some of the records of last-noted migrants: Near latitude 64° north of Fort Rae, Mackenzie, August 10, 1903; Great Falls, Mont., September 13, 1889; Lanesboro, Minn., September 10, 1889; Ottawa, September 7, 1901; North River, Prince Edward Island, August 20, 1889; St. John, New Brunswick, September 2, 1890; Montreal, September 3, 1890; Lewiston, Me., September 5, 1898; Providence, R. I., September 4, 1901; Englewood, N. J., September 1, 1886; Germantown, Pa., September 24, 1887; Washington, September 28, 1890; Raleigh, N. C., August 28, 1888; Asheville, N. C., September 1, 1890; Frogmore, S. C., September 28, 1886; Grinnell, Iowa, August 24, 1887; Chicago, September 6, 1899; St. Louis, September 3, 1896; Onaga, Kans., August 24, 1894; Bonham, Tex., September 12, 1889; New Orleans, October 27, 1893.

Though in migration the yellow warbler occurs in Florida as far south as Key West and is sometimes fairly common in northern Florida, the numbers that migrate through the southern part of the State must be very small, for not a bird passing north or south has been reported from any of the Florida lighthouses. The migration route of the yellow warblers that breed near the Atlantic coast is evidently southwest to northern Georgia and Alabama, and then across the Gulf of Mexico.

652a. **Dendroica æstiva sonorana** Brewst. Sonora Yellow Warbler.

This southwestern subspecies of the yellow warbler nests in northwestern Mexico, southern Arizona, southern New Mexico, and western Texas, and extends its breeding range northward until it meets the eastern form approximately in central New Mexico. It retires to Mexico and Guatemala for the winter, but its range in these countries has not yet been satisfactorily determined.

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[a] Cherrie, Auk, VII, 335, 1890.

652b. Dendroica æstiva rubiginosa (Pall.). Alaska Yellow Warbler.

The breeding yellow warblers of British Columbia and Alaska have been segregated under this name. They migrate through California and winter in Mexico, but the records of their movements can not be separated from those of the allied varieties inhabiting these districts.

653. Dendroica bryanti castaneiceps Ridgw. Mangrove Warbler.

The mangrove warbler is not found in the United States, but occurs in western Mexico and Lower California, where it may be found both in winter and summer.

654. Dendroica cærulescens (Gmel.). Black-throated Blue Warbler.
654a. Dendroica cærulescens cairnsi Coues. Cairns Warbler.

The Cairns warbler breeds in the Alleghenies from Virginia (rarely Pennsylvania) southward to northern Georgia. In North Carolina it nests commonly at 3,000 to 4,500 feet above sea level, and in fall migration individuals have been seen at 6,400 feet elevation.

The records of migration and wintering of the black-throated blue warbler make no distinction between the two forms, *cærulescens* and *cairnsi*; hence in the following accounts of winter range and spring and fall migration the two forms are treated as one.

Breeding range.—The breeding range of *cærulescens* extends from Newfoundland and northeastern Quebec through northern New England and south in mountainous country to Pennsylvania. The bird breeds rather commonly in the vicinity of Montreal, and not uncommonly westward to Michigan and northern Minnesota, in which State it is found as far west as the forests extend.

Migration range.—To the southward it is scarcely found west of the Mississippi River, though it has been several times recorded in Iowa and Missouri. Accidental occurrences have been noted at Lincoln, Nebr., in Finney County, Kans., at Denver, Colo., and at Rio Mimbres and Rio Grande, N. Mex. The southwestern limit of the regular range of the species is probably the mouth of the Mississippi River.

Winter range.—The black-throated blue warbler occurs in winter in the United States at Key West, Fla., where it is sometimes not uncommon. At this season it is the most abundant of North American birds in Cuba, and is equally common in Haiti. In Jamaica it is less common, and in the Bahamas rare, though very abundant in the latter islands during the spring migration. While very abundant on the south coast of Cuba, it is rare farther south, though it has been taken at Little Cayman,[a] Swan Islands,[b] and Cozumel.[c] The sole record of its occurrence in Central America is that of a specimen from Coban,[a] Guatemala (4,300 feet altitude); and the only record of its capture in South America is that of an adult male taken in the Santa Marta district at Las Nubes,[b] Colombia (5,000 feet). The winter home of the black-throated blue warbler is better defined than that of any other common warbler, and allows a very exact determination of the square miles of territory occupied by it at this season. Cuba, Haiti, and Jamaica, with a combined area of 74,000 square miles, are doubtless occupied during the winter by the great majority of the individuals of the species. The remaining birds do not probably cover enough territory to bring the total to 80,000 square miles. This is a small area compared with that occupied during the breeding season, and is about equal to that part of the summer range of the bird which extends along the Atlantic slope in the United States.

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[a] Cory, Auk, VI, p. 31, 1889.

[b] Ridgway, Proc. U. S. Nat. Mus., X, p. 575, 1888.

[c] Ridgway, Proc. U. S. Nat. Mus., VIII, p. 564, 1885.

Spring migration.—Outside the lighthouse records, there are almost no spring records of the black-throated blue warbler in Florida, but a full set of data from North Carolina allows a calculation of the approximate time when the species crosses from Cuba to Florida. The average of the earliest spring arrivals noted for eleven years at Raleigh, N. C., is April 27, with extremes of April 23, 1892, and May 2, 1893, in normal migration; in 1888 and 1894 stragglers were seen somewhat earlier. At Asheville, N. C., 2,000 feet above sea level, the average for four years was April 22, with extremes of April 19, 1893 and April 26, 1890. The species is one of the few that appear in the mountains earlier than on the plains, and the case seems to sustain the theory that the individuals of a species that breed farthest south are the first to migrate in the spring; hence the inference that the arrivals noted at Asheville were those of birds about to breed in the vicinity, while those at Raleigh were of birds proceeding to more northern breeding grounds.

It is about 800 miles nearly due north from Sombrero Key, Florida, to Asheville, N. C. Few species of birds migrate in the spring faster than 25 miles per day. At this rate it would require a whole month for the journey of a bird from southern Florida to North Carolina. With the North Carolina dates in mind, we should therefore expect the black-throated blue warblers to be striking the Sombrero Key light in the latter part of March. But as a matter of fact the birds appear there scarcely earlier than in North Carolina. A single bird struck the lighthouse March 9, 1886, and three others March 21, 1886. With these exceptions, the earliest dates are April 15, 1885, April 11, 1886, April 19, 1887, and April 14, 1888. This absence of earlier records is not due to lack of weather conditions favorable for striking, for in the spring of 1887, between March 3 and April 13, the

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[a] Salvin, Ibis, p. 205, 1866; Sharpe, Cat. Birds Brit. Mus., X, p. 651, 1885.

[b] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 177, 1900; Auk, XVII, 367, 1900.

Sombrero Key light was struck by birds on eleven nights. Thirteen species of warblers were noted among the birds killed, but none of these were *cærulescens.* The latter species, however, was taken in four out of the next five flights. The evidence was just as strong the next season. This species was not taken during the first six flights of March and early April, but after April 14, when the bird was first observed among those striking the light, it was included in every large flight of the ensuing month. This seems to show that the species does not normally begin its migration much before the middle of April, and furthermore that some individuals may make the journey from Cuba to the southern Allegheny Mountains at a single flight.

The latest date on which a north-bound migrant was noted at Raleigh, N. C., in the eleven years from 1890 to 1900 was May 16, and the average of the dates on which the latest migrant passed was May 11. There is an apparent discrepancy between these Raleigh dates and the dates on which the birds are recorded as passing the southern Florida lighthouses. As previously shown, the journey from the lighthouses to North Carolina should occupy a month, yet black-throated blue warblers struck the lights in May for five consecutive years, and in 1889 as late as May 29. On May 8, 1888, 41 birds struck the lights and on May 12, 18; 17 birds struck one of the lighthouses near St. Augustine May 14, 1884, and dead birds were picked up at Alligator Reef lighthouse May 21, 1885, and May 11, 1888. North of Raleigh the average date of arrival at Frenchcreek, W. Va., is April 29; Washington, D. C., and Renovo, Pa., May 3; Philadelphia and southeastern New York, May 6; northeastern New York, May 9; central Massachusetts, May 8; Boston, May 10; St. Johnsbury, Vt., May 9; southern Maine, May 14; Quebec, May 11; central New Brunswick, May 16.

In southern Louisiana and southern Mississippi the black-throated blue warbler is almost unknown. In eight years' collecting in this region three good ornithologists saw but two individuals of the species. In northwestern Mississippi, however, at Shell Mound, three birds were seen on April 7, 1892, and the species was common the next day. At New Orleans spring migrants were recorded on March 22, 1894, and March 26, 1897. These dates are in advance of those of the ordinary migration to southern Florida, and undoubtedly represent a movement directly across the Gulf of Mexico.

Migration west of the Alleghenies corresponds almost exactly in time with that at corresponding latitudes along the Atlantic slope, as evidenced by the following records of average date of arrival: Brookville, Ind, April 30; Waterloo, Ind., May 5; northern Ohio, Chicago, and southern Michigan, May 7; Milwaukee, Wis., May 9; southern Ontario, May 8; Parry Sound district, Ontario, May 10; Ottawa, May 11.

Fall migration.—The black-throated blue warbler has one of the simplest of fall migration routes. The individuals breeding in New England and to the northward follow the Coast States to Florida and cross to the West Indies, while those from the interior migrate south and slightly southeast to join the eastern birds. First migrants are noted on the average at Chicago, September 1, the earliest date being August 25, 1898. Near Philadelphia the average for six years is September 13, and the earliest date September 8, 1898. The earliest migrant at Washington was noted August 21, 1887. Records of average date of last birds seen are: Ottawa, September 29; Chicago, October 1; Renovo, Pa., October 6, and Frenchcreek, W. Va., October 9. Some latest records are: Ottawa, October 7, 1900; Chicago, October 10, 1897; Petitcodiac, New Brunswick, September 5, 1886; Montreal, September 24, 1887; Lewiston, Me., October 3, 1897; Renovo, Pa., October 11, 1897; Washington, October 14, 1888; Frenchcreek, W. Va., and Asheville, N. C., October 15, 1890. The first of the species to reach southern Florida usually arrive early in September, though few individuals are noted before the middle of the month, following which they come in clouds. At the lighthouses large flights are observed every few days from September 13 to November 18. Omitting an accidental occurrence on July 28, the extremes of fall migration at the lighthouses are from September 3 to November 30, or nearly a third of the entire year. In 1888 black-throated blue warblers were quite common from August 5 to November 10 at St. Lucie, on the east coast of Florida. At Raleigh, N. C., most of the fall migrants are seen between October 4 and October 19; and, omitting a single stray bird noted November 19, 1885, the extreme dates are September 11 and October 24. Thus the first birds appear at Raleigh just about the time the heaviest flights are passing Sombrero Key.

Black-throated blue warblers strike the lighthouse at Sombrero Key in greater numbers than any other kind of bird, particularly during the fall migration. Although they were observed to strike the light in spring on twenty-five different nights in the course of five years, the total of their numbers (122) was not large. But in the fall their aggregate is very great. In five years' time they struck the light on seventy-seven nights, and as a result 450 dead birds were picked up on the platform under the lantern. Probably a still larger number fell into the sea. Adding to these those that were merely stunned and that remained on the balcony under the light until able to resume their journey, the keeper counted 2,000 birds that struck. There were two nights, however, when the numbers of this species were so great that no attempt was made to count them. The Fowey Rocks lighthouse was struck on thirty different nights. It is certain, therefore, that the black-throated blue warbler passes in enormous numbers along both coasts of southern Florida. Yet judging by the statements of local observers, the species is rare from central Florida to the southern Alleghenies. At Puntarasa, a third of the way up the west coast of Florida, Atkins considers it common in fall and rare in spring; a little farther north at Tarpon Springs, according to Scott, it is rare in spring and absent in the fall; at Gainesville, Fla., Chapman saw but six individuals in the entire spring of 1887; and at Palatka, Fla., Hasbrouck saw none. North of Florida three good observers in Alabama and two in Georgia do not report the species. In five years' collecting in South Carolina it was not noted by Hoxie, and only four out of nine observers in North Carolina report its occurrence.

655. Dendroica coronata (Linn.). Myrtle Warbler.

Breeding range.—The myrtle warbler breeds generally in Labrador, Newfoundland, Quebec, Ontario, New Brunswick, Nova Scotia, and northern New England, and locally in southern Maine, reaching there its southernmost breeding ground at ocean level. It breeds commonly in the mountains of New Hampshire and Vermont and in the Adirondacks, less commonly in the Catskills and the elevated portions of Massachusetts, and is rare or accidental in summer at Utica and Buffalo, N. Y. The regular breeding range extends westward from the Adirondacks along the north shore of Lake Huron to the northern peninsula of Michigan and the hill district of northeastern Minnesota. It has been found breeding from Manitoba to central Keewatin and through the Northwest Territories, British Columbia, and Alaska, to the shores of the Arctic Ocean. There is one record of the species breeding on the island of Jamaica. A female in worn plumage taken at Key West,[a] July 28, 1888, may have nested in a southern latitude. A specimen (young of the year) taken at Ciudad Durango, Mexico, July 27,[b] was moulting into the first autumn plumage.

Winter range.—The myrtle warbler is the hardiest of the warblers of the United States, and spends the cold season as far north as southeastern Kansas, southern Illinois, southern Indiana, and southern New England. It winters regularly and commonly in North Carolina, even at an altitude of 2,000 feet, and along the coast and a few miles inland it occurs with more or less frequency as far north as Massachusetts, and even to Cape Elizabeth, Me. At Worcester, Mass., in the central part of the State, it winters regularly but sparingly. Although the winter and summer homes of the species in Massachusetts are thus not widely separated, it is not to be supposed that the winter birds are the same individuals that breed in the elevated parts of the State; these latter doubtless have passed south.

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[a] Scott, Auk, V, p. 430, 1888.

[b] Sharpe, Cat. Birds Brit. Mus., X, p. 314, 1885.

The myrtle bird is found in winter throughout the Bahamas, and is a common winter resident of Cuba, Haiti, Jamaica, and Porto Rico. It also includes in its winter range eastern Texas and eastern Mexico, where it is one of the commonest winter birds from the coast to 3,000 feet and is less common 1,000 feet higher. It ranges west rarely to Guanajuato[a] and reaches the Pacific Ocean at the Isthmus of Tehuantepec. It is not uncommon in Yucatan[b] and is generally distributed in Guatemala up to an elevation of 5,000–6,000 feet. Farther east it is not common, though it has been taken at Belize, British Honduras, San Pedro, Honduras, and on the islands off the coasts of Yucatan[c] and Honduras.[d] The species has been found in eastern Nicaragua[e] from November 28 to February 16, has been taken in Costa Rica in the Angostura Mountains and twice at San José,[f] and has been recorded twice in Panama—at Lion Hill near the north coast and at Chiriqui in the mountains on the Pacific slope. It has not yet been reported from the mainland of South America. The foregoing records show that the winter distribution of the species in Mexico and Central America is not such as would be anticipated of a bird so strictly boreal in its breeding habits. In general it occupies the coasts and the lower plateaus, while the sides of the mountains, where it would be expected to occur, are occupied by its western relative, the Audubon warbler.

Spring migration.—The myrtle warbler is one of the first migrants to move northward. A large flight struck the Alligator Reef lighthouse February 23, 1892, and some 60 birds struck the Sombrero Key lighthouse March 3, 1889. By the middle of March migration is well under way over all the winter range, and the foremost birds keep close behind the disappearance of frost. A strange state of affairs appears in connection with the migration of the myrtle warbler in the district just north of the ordinary winter range. The bird is well known, and the records are so numerous that the usual dates of arrival can be ascertained with much accuracy. Four towns in Pennsylvania, varying in altitude from Philadelphia at sea level to Renovo at about 1,000 feet, report average dates of arrival ranging from April 27 to April 30. Directly north in the western half of New York the average date of arrival varies from May 1 to May 3, and the same dates will cover the usual time when the first birds appear in northwestern Ohio. In southeastern New York the average date of arrival is April 25; at Boston, April 22; in southern New Hampshire and southern Maine, April 23; at St. John, New Brunswick (average of eleven years of observation), April 23, and in the Province of New Brunswick (average of nine years' records in various places), April 24. Thus the first myrtle warblers are noted in New Brunswick about a week before they are seen in Pennsylvania and New Jersey, some 600 miles to the southwest. The average dates of arrival in southern Ontario are a few days earlier than in the portions of New York, Pennsylvania, and Ohio lying directly to the south. Around Lake Michigan stretches another district of early spring appearance. The average date of arrival at Chicago and Rockford, Ill., is April 16; Milwaukee, Wis., April 18, and Grand Rapids, Mich., April 16. The same anomalous state of affairs found along the Atlantic coast appears on the Mississippi River. At four towns in southeastern Iowa the average date of arrival, aggregating twenty-seven years of observation, is April 19; while the average date for nine years at Lanesboro, Minn., and for seven years at Elk River, Minn., is in each case April 16. Thus the myrtle warbler appears three days earlier at Elk River than in the district 300 miles farther down the river.

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[a] Dugès, La Nat., I, p. 140, 1870.

[b] Stone, Proc. Acad. Nat. Sci. Phil., p. 210, 1890; Boucard, P. Z. S., p. 440, 1883.

[c] Salvin, Ibis, p. 248, 1888.

[d] Ridgway, Proc. U. S. Nat. Mus., X, p. 575, 1888.

[e] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893.

[f] Cherrie, Auk, VIII, p. 278, 1891.

Outside of the districts of apparently irregular movement the first myrtle warblers appear on the average at Pictou, Nova Scotia, April 30; Halifax, Nova Scotia, May 2, and North River, Prince Edward Island, April 26. The arrival of the myrtle warbler at North River is therefore one day earlier than at Beaver, Pa., while in the case of 11 other warblers the average arrival is thirteen days later. Southern Michigan is reached on the average April 25, southern Ontario April 29, and Ottawa May 2. The migrants up the Mississippi Valley pass into southern Manitoba April 23, and have been noted at Osler, Saskatchewan, May 4, 1893; Edmonton, Alberta, May 8, 1903; near Athabasca Landing, May 4, 1901; Fort Simpson, Mackenzie, May 16, 1861, and May 7, 1904; and Fort Good Hope, Mackenzie, May 25. The western birds arrive in southern British Columbia April 15; at Fort Reliance on the upper Yukon, May 5, and at the mouth of the Yukon, May 18. In 1899 the first were noted on the Kowak River in northwestern Alaska, May 22.

By the last of March all the myrtle warblers have departed from Jamaica, Haiti, Cuba, and the Bahamas. The latest recorded date of striking of this species at any of the Florida lighthouses is April 3, 1889. By the middle of the month the latest northbound birds have left southern Florida. For six years the average date on which the latest birds passed Raleigh, N. C., was May 6. Directly west of Raleigh, at Asheville 2,000 feet up in the mountains, the latest migrants seen in the spring were noted on April 25, 1890; April 30, 1894; May 18, 1893, and May 18, 1899. In six years' time at New Orleans the average date of departure of the latest myrtle warbler was April 22, with variations from April 21 to April 27. Most of the migrants cross the Rio Grande into Texas about the middle of March, and it is the middle of April before the last have passed north.

Fall migration.—As would be expected from its northern breeding range, the myrtle warbler is a late fall migrant. It usually reaches Englewood, N. J., September 26; Philadelphia, September 27, and Washington, October 1. At Raleigh, N. C., the average date of its arrival for twelve years is October 16, with extremes of October 11, 1886, and October 21, 1885. Not many myrtle warblers reach Florida before November, and they are the last migrants to arrive in Cuba. In 1887 none of the species struck at Sombrero Key lighthouse until November 11, but the next fall they began striking October 3, and were noted also on October 4, 9, and 29, November 4, 10, and 11, and December 1. The first migrants reach northwestern Minnesota about September 8; Lanesboro, Minn., September 22; southern Wisconsin, September 25; Chicago, September 27; Waterloo, Ind., October 3, and St. Louis the first week in October. The average date of fall arrivals for seven years in the vicinity of New Orleans is October 18, with extremes of October 12, 1895 and 1897, and October 31, 1893. This is a little earlier than in corresponding latitudes along the Atlantic coast. The myrtle warblers desert the northern part of their breeding range by the last of August or early in September, but their southward retreat is so slow that many are still north of the United States until well into October. The last fall migrant was seen August 24, 1903, at latitude 65° near Great Bear Lake; and almost two months later, on October 15, a straggler was seen near latitude 62° on the Mackenzie River. Records of the average date of the last seen are: Aweme, Manitoba, and Parry Sound district, Ontario, October 10; Ottawa, October 23; southern Ontario, October 24; Quebec and North River, Prince Edward Island, October 8; St. John, New Brunswick, October 23. The dates are not much later in the northern United States, where the species has been noted on the average at Lanesboro, Minn., until October 22; Grinnell, Iowa, October 28; Chicago, October 23; southern Maine, October 17; central Massachusetts, October 19; central Connecticut, October 26; southeastern New York, November 12; Philadelphia, November 9.

656. **Dendroica auduboni** (Towns.). Audubon Warbler.

Breeding range.—The Audubon warbler replaces the myrtle warbler from the Rocky Mountains to the Pacific. It breeds north to British Columbia, Alberta (Calgary), Montana, and the Black Hills of South Dakota, south to southern California, northern Arizona, and New Mexico, and east to Colorado and western Nebraska. It has occurred accidentally in Pennsylvania and Massachusetts. It nests to an altitude of 11,000 feet.

Winter range.—While to the eastward the Audubon warbler scarcely winters north to the Rio Grande, yet on the Pacific slope it is found at this season in most of the valleys of California, and a few spend the winter in southern Oregon. The winter range extends over most of Mexico to Guatemala; the species is most abundant in western Mexico and the higher districts of the eastern and southern parts.

Spring migration.—As would be expected from the winter range of the Audubon warbler, the dates of spring arrival are very different in the eastern and western portions of its habitat, respectively. In southern Arizona and southern New Mexico the first birds arrive in March, advance to northern Colorado by the third week in April, and reach the Black Hills in the first week of May. Passing northwestward, the average dates of arrival are April 29 at Great Falls, Mont.; April 23 at Columbia Falls, Mont.; and March 20 in southern British Columbia. On the plains of eastern Colorado and western Kansas, where the species is known only as a migrant, the dates are all late—from April 29 to May 27.

Fall migration.—In August the mountain breeding birds begin to descend to lower altitudes, and during September reappear on the plains. The earliest migrants move south of the breeding range in the last week of September and enter Mexico soon after the 1st of October. The northern part of the range in Montana is deserted about the 10th of October.

656a. Dendroica auduboni nigrifrons Brewster. Black-fronted Warbler.

Breeds in the mountains of northwestern Mexico and north to the mountains of southern Arizona. The winter range has not yet been determined, but the parties of the Biological Survey have taken the bird in fall migration at 6,000 feet in Durango. The arrival of the first migrant was noted May 9, 1902, in the Huachuca Mountains, Arizona, and an exceptionally early migrant was seen April 5, 1903.

657. Dendroica maculosa (Gmel.). Magnolia Warbler.

Breeding range.—One of the best examples of a species limited during the breeding season to the Canadian zone is the magnolia warbler. Its breeding range is from the higher parts of Massachusetts, northern New York, northern Michigan, northern Minnesota, and southern Assiniboia (Wood Mountain) to Newfoundland, northern Quebec, Hudson Bay, Lesser Slave Lake, Fort Simpson, and the Nahanni Mountains. It is rare or casual in British Columbia. It breeds not uncommonly near the summits of the Allegheny Mountains of eastern Pennsylvania, in a region that in the higher portions probably furnishes Canadian conditions. The same is probably true of its southernmost breeding home in western Maryland where it nests on the highest mountains.

Winter range.—The winter distribution of the magnolia warbler is about as extensive as the breeding area, but while in the summer the species is a bird of the Canadian life zone, in winter it is an inhabitant of the hot coastal region of Mexico and Central America. Its winter home in Mexico extends from northeastern Puebla and central Vera Cruz to the Pacific coast of eastern Oaxaca and eastward to Tabasco and Chiapas. It is fairly common in the lower parts of this district and less common in the higher. The highest altitude at which it has been noted in winter is about 3,000 feet, although in spring migration a few individuals have been seen at Orizaba, Vera Cruz, at 4,000 feet elevation. In Guatemala the species is found on the lowlands of the Pacific coast and to an altitude of 5,000 feet throughout much of the country as far north as Vera Paz. It has been noted at the following points on the Atlantic coast of Mexico and Central America: Northeastern Yucatan (common in spring migration); Cozumel Island, eastern Yucatan (January); Belize, British Honduras; Ruatan Island (common), and Truxillo, Honduras; coast of southeastern Nicaragua (quite common); Costa Rica (one record); and Panama (not infrequent on the north coast). It is recorded from Lake Nicaragua, where it is rare.

The Bahamas and Cuba are commonly included in the winter range of the magnolia warbler, but there is no positive record of the occurrence of the bird in winter in either. The statements of Bryant that in New Providence,[a] Bahamas, the magnolia warbler was "as abundant as in the United States," and that "a few were seen as early as the 15th of March," are certainly questionable. Six specimens were taken on Watlings Island,[b] Bahamas, October 6–21, 1891, probably in fall migration. The island of Eleuthera,[c] Bahamas, is given by Cory as one of the places where the species has occurred, but no authority is cited in support of the statement. The species was once seen in April in Cuba,[d] and once in December in Haiti,[e] and there are strange records of capture in Porto Rico[f] September 26, 1899, and December 26, 1900. All these West Indian records probably refer to wandering birds. Similar wanderings have been noted farther north. The bird has been taken a few times at the eastern base of the Rocky Mountains, three times in California, and twice in British Columbia.

Spring migration.—The dates of arrival of the magnolia warbler in spring furnish the best evidence yet available in support of the theory that birds migrating across the Gulf of Mexico do not always alight as soon as they reach the shore. The species is a common spring migrant from the Mississippi River to the Atlantic, between latitudes 37° and 39°. South of this district it becomes less and less common, except in the mountains, until in the Gulf States it is rare. (In the fall it is common in the Gulf and South Atlantic States to northern Georgia.) In spring migration it appears at nearly the same time throughout the region extending from Lake Michigan and Chesapeake Bay south to the Gulf of Mexico, as is shown by the following records of earliest appearance in spring: Key West, Fla., April 27, 1889; Kirkwood, Ga., April 26, 1898, April 20, 1900, April 29, 1902; Rising Fawn, Ga., May 1, 1885; Chester County, S. C. (general summary of fourteen years' observation), "first two weeks of May;" Asheville, N. C., May 8, 1890, May 7, 1899; Raleigh, N. C., May 11, 1885, May 10, 1889; Shelby, Ala., May 4, 1898; New Orleans, May 2, 1895, May 5, 1897, April 26, 1903; Rodney, Miss., May 3, 1889; Helena, Ark., May 3, 1896, May 8, 1898; Acton, Ky., May 4, 1901; Lexington, Ky., May 1, 1899; Pierce City, Mo., May 2, 1885; St. Louis, May 3, 1882, May 3, 1883, May 5, 1884, May 4, 1885, May 4, 1886, May 5, 1887, May 5, 1888. Averages of date of arrival for several years are: April 30 at Washington (earliest date April 22, 1891); May 5, at Beaver, Pa., and May 6, at Chicago (earliest date May 1, 1895). North of this district the migration is fairly uniform though rapid, the first magnolias being seen on the average at Renovo, Pa., May 7; in central Massachusetts, May 11; St. John, New Brunswick, May 16; Montreal, May 20; Godbout, Quebec, May 22, and North River, Prince Edward Island, May 26. West of the Alleghenies the average date of arrival in northern Ohio is May 8; southern Ontario, May 11; Ottawa, May 13; southern Michigan, May 11; southern Wisconsin, May 10; Lanesboro, Minn., May 9; Aweme, Manitoba, May 16. The first arrival was seen at Qu'Appelle, Assiniboia May 18, 1899; Grand Rapids, Athabasca, May 22, 1903; Fort Chippewyan, Athabasca, May 23, 1901, and Fort Simpson, Mackenzie, May 23, 1860, and May 31, 1904.

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[a] Bryant, Proc. Bost. Soc. Nat. Hist., VII, p. 110, 1859.

[b] Cory, Auk, IX, p. 49, 1892.

[c] Cory, Cat. Birds W. I., p. 118, 1892.

[d] Gundlach, Anal. Soc. Esp. Hist. Nat., VII, p. 183, 1878.

[e] Cory, Birds Haiti and San Domingo, p. 29, 1885.

[f] Bowdish, Auk, XX, p. 18, 1903.

The records from central Massachusetts, St. John, New Brunswick, Beaver, Pa., Ottawa, Lanesboro, Minn., and Aweme, Manitoba, all make it probable that from May 5 to May 15, the magnolia warbler is migrating at a speed of 40 to 45 miles per day. If it is a fact, as seems probable, that all birds migrate faster as they near the northern part of their range, then it follows that the magnolia warbler either enters the United States several days previous to April 14, or else in its initial flight passes far inland.

In southern Texas, where the species is not common, the dates are comparatively late, as the following list shows: Lower Rio Grande, April 22, 1890; Corpus Christi, May 1, 1882, May 14, 1898; Bee County, April 20, 1887; San Antonio, May 12, 1891.

Records of the spring movements of the Magnolia warbler in Mexico and Central America are yet too meager to show any departures corresponding to the late appearance of the species in the United States. Sumichrast says that magnolia warblers occur from December to March in Oaxaca, Mexico; Richmond saw none after February 5 in Nicaragua; and along the eastern coast of Yucatan, where there was previously but a single record of occurrence, the parties of the Biological Survey found them in spring migration common to April 13. Some records of latest dates on which the birds were noted in spring in the southern part of the United States are as follows: Key West, Fla., May 17, 1887; Dallas, Tex., May 18, 1898; Helena, Ark., May 16, 1897; Shelby, Ala., May 12, 1898; St. Louis, May 18, 1884, May 22, 1885, May 18, 1887.

Fall migration.—Over much of the southern part of the United States the magnolia warbler, though rare in spring, is common in fall. The first fall migrants have been noted at Lanesboro, Minn., August 12, 1887; Grinnell, Iowa, August 20, 1886; Chicago, August 12, 1896; Englewood, N. J., and Washington, August 16, 1889; and Raleigh, N. C., September 11. In Chester County, S. C., the fourteen-year records of Loomis show that the earliest arrival from the North during that time was on September 3; that the bird is not uncommon in September; that the main body of migrants arrive about October 1; and that all are gone before October 15. Latest dates on which fall migrants were noted are: Aweme, Manitoba, September 17, 1900; Lanesboro, Minn., September 12, 1889; Ottawa, September 19, 1895; North River, Prince Edward Island, September 8, 1890; St. John, New Brunswick, September 7, 1890; Chicago, October 9, 1894; Philadelphia, October 9, 1888; Washington, October 10; and Asheville, N. C., October 10, 1894. At New Orleans the species is one of the common fall migrants. During three years the average date of earliest arrival was September 18; the birds were present in largest numbers from September 25 to October 7; and the dates on which the latest migrants were noted ranged from October 23, 1897, to November 1, 1895. South of the United States the magnolia warbler has been taken at Truxillo,[a] Honduras, September 27, 1887, and the first arrival has been noted in southeastern Nicaragua,[b] October 27, 1892.

The general path of migration of the species seems to cross the middle of the Gulf of Mexico. It is bounded approximately on the east by a line drawn from the north central part of Georgia to eastern Yucatan, while few individuals seem to proceed farther west than the coast line from eastern Texas to southern Vera Cruz. In common with some twenty other species of birds the magnolia warbler seems to make its flight between the United States and Yucatan without taking advantage of the peninsula of Florida or using Cuba as a stopping place. At the southern end of the Allegheny Mountains it is a common migrant, while it has been noted only three times in Florida and only once in Cuba.

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[a] Ridgway, Proc. U. S. Nat. Mus., X, p. 579, 1888.

[b] Richmond, ibid., XVI, p. 484, 1893.

658. Dendroica cerulea (Wils.). Cerulean Warbler.

Breeding range.—The principal summer home of the cerulean warbler is in the valley of the Ohio River. The species ranges eastward to Virginia, Maryland, western Pennsylvania, and western and central New York, but is much less common in this region, being rare east of the Allegheny Mountains. It occurs casually in New Jersey and southern New England. North of the Ohio Valley it ranges to southern Ontario, southern Michigan, and southern Minnesota. It is found regularly west to eastern Nebraska, eastern Kansas, and eastern Texas, while accidental occurrences have been noted at Denver, Colo., and Rio Mimbres, N. Mex. The southern limits of its regular breeding range are the mountains of Virginia and Tennessee; but it has been known to breed irregularly along the Choptank River in western Delaware, at Baltimore, Md., Greensboro, Ala., in Franklin and St. Tammany parishes, La., and in the Creek and Cherokee Nations, Okla. One of the parties of the Biological Survey took an old male and a young male of the year on June 24, 1902, at Texarkana, Tex.

Winter range.—The cerulean warbler is chiefly found in winter in South America from Panama south to Peru, in which country it seems to have its center of abundance. In western Peru Jelski[a] found it common at Monterico and other places in the mountains east of Lima at 10,000 to 13,000 feet elevation, always in wandering flocks, which were sometimes quite large and contained both old and young birds. Its abundance in northern Peru is remarked by Stolzmann.[b] In central Peru a specimen was taken in January, 1891, at Gloria[c] (3,200 feet), and a female on March 14, 1893, at San Emilio,[c] in the Valley of Vitoc (above 3,500 feet). In northeastern Peru Stolzmann took three cerulean warblers on February 10 and March 15, 1880, at Huambo[d] (3,700 feet). The southernmost records of the species are from Nairapi and Tilotilo[e] near La Paz, Bolivia, at an elevation of at least 13,000 feet, the greatest altitude at which the bird has been observed. Specimens were taken at Mapoto,[f] Machay,[f] and Sarayacu,[g] in central Ecuador, on dates ranging from November to February and at altitudes varying from 3,000 to 7,000 feet. Others were also secured on the Rio Napo,[h] in eastern Ecuador. The species is not uncommon on both coasts and in the mountains of Panama, but it seems to migrate through western Colombia, avoiding the mountains of the northern part, where it has not been found by any of the explorers who have made such large collections in the Santa Marta region. It has been taken at Medellin[a] in the mountains of central Colombia at 5,000 feet; at Bogota;[b] and there are specimens in the British Museum from the interior of Colombia and Antioquia.

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[a] Taczanowski, P. Z. S., p. 508, 1874.

[b] Taczanowski, Orn. du Perou, I, p. 465, 1884.

[c] Berlepsch and Stolzmann, P. Z. S., p. 330, 1896.

[d] Taczanowski, P. Z. S., p. 6, 1882.

[e] Sclater and Salvin, P. Z. S., p. 594, 1879.

[f] Taczanowski and Berlepsch, P. Z. S., p. 74, 1885.

[g] Sharpe, Cat. Birds Brit. Mus., X, p. 651, 1885.

[h] Sclater, P. Z. S., p. 64, 1858.

It is not probable that the cerulean warbler winters north of Panama, but there are a few records of the species during the migrations. It was seen four times during the fall migration at San José,[c] Costa Rica; it was once taken at San Pedro[d] in northwestern Honduras, once by Gundlach in April in Cuba,[e] and once on the island of Grand Cayman,[f] and one struck the lighthouse at Cay Lobos,[g] Bahamas, April 26, 1901. There is no Nicaragua record. The only records between Honduras and Texas are of Deppe's[h] specimens, said to have been taken in Mexico; Schott's record for Yucatan,[i] and those of the two specimens noted by Baird,[j] one as being in the cabinet of Lawrence and coming from Guatemala, the other one of Verreaux's birds, labeled "Coban, Guatemala." This species was not seen by any of the parties whose work formed the basis of the Biologia Centrali-Americana, nor has it been noted in Mexico by any of the parties of the Biological Survey.

Spring migration.—There is but one March record of the cerulean warbler in the United States, and this is of one taken on the 23d of the month in 1890 at the Tortugas. The spring records of the bird at Eubank, Ky., cover a period of eight years. The average date of the first bird seen is April 13; date of second seen, April 14; date when birds were common, April 20; extreme dates of first arrival, April 5, 1892, and April 21, 1895. The earliest date for the species in Chester County, S. C., is April 13, while at St. Louis the average date of arrival is April 15. Other records of average date of first seen are: Brookville, Ind., April 27; Beaver, Pa., May 1; Petersburg, Mich., May 2, and southern Ontario, May 7. In 1902 the first bird was reported from North Freedom, Wis., May 4, and in 1887 from Lanesboro, Minn., May 5. These dates seem to determine quite closely the time of arrival of the earliest birds at their breeding grounds, but there are no corresponding dates for the Gulf Coast. The dates for Key West, Fla., are April 16, 1887, and April 29, 1889; for New Orleans, April 8, 1898, and April 10, 1899. All the Texas records of first arrivals are late: Brownsville, April 14, 1890; Corpus Christi, middle of April, 1900; Refugio County, April 17, 1899; Bee County, April 21, 1887; Dallas, April 20, 1898; Gainesville, April 15, 1887, and April 22, 1889. Records of arrival north of Texas are: Clinton, Ark., April 24, 1890; Statesbury, Mo., April 30, 1894; Independence, Mo., April 29, 1900, and Onaga, Kans., May 4, 1896.

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[a] Sclater and Salvin, P. Z. S., p. 494, 1879.

[b] Sclater, Cat. Am. Birds, p. 31, 1862. Sharpe, Cat. Birds Brit. Mus., X, p. 329, 1885.

[c] Cherrie, Auk, IX, p. 21, 1892.

[d] Sclater and Salvin, P. Z. S., p. 836, 1870.

[e] Gundlach, J. f. Orn., p. 414, 1872.

[f] Cory, Auk, III, p. 501, 1886.

[g] Bonhote, Auk, XX, p. 171, 1903.

[h] Lichtenstein, Preis-Verz. Mex. Vög. 2, 1830.

[i] Lawrence, Ann. Lyc. Nat. Hist., IX, p. 200, 1869.

[j] Baird, Rev. Am. Birds, I, p. 191, 1865.

Fall migration.—The cerulean warbler is a rare migrant in the States along the Atlantic coast, though it has been noted in the Carolinas, Georgia, and Florida. In northeastern Texas and Louisiana it is not uncommon. Its main route of migration seems to cross the Gulf of Mexico chiefly from Louisiana and Mississippi. The species is one of the first to start on the southward migration. By the middle of summer it has reached the Gulf coast and is well on its way to its winter home. At Beauvoir and Bay St. Louis, on the coast of Mississippi, it has appeared in different years on dates ranging from July 12 to 29. For a few days it is common, attaining the height of its abundance about the first week in August. It then passes southward so rapidly that Cherrie was able to record its presence on August 24, 1890, at San José, Costa Rica. By November it reaches central Ecuador. Though the bulk of the birds perform their migration at this early date, some laggards remain behind until late in the season. Records of latest migrants are: London, Ontario, September 1, 1900; Livonia, Mich., September 1, 1892; Beaver, Pa., September 14, 1889; and Berwyn, Pa., September 27, 1889. At Eubank, Ky., migration movements were recorded for the eight years 1888 to 1895. The average date of the last bird seen at this locality, where the species breeds abundantly, is August 23, and the latest date is September 14. In Chester County, S. C., just across the mountains from Eubank, where the earliest southbound birds are reported to arrive by August 8, the species has been seen as late as October 22. In 1886 in central Texas some small flocks were reported as late as October. It would seem that these were unusually late birds, for Cherrie states that the latest migrants leave San José, Costa Rica, by the end of October.

659. **Dendroica pensylvanica** (Linn.). Chestnut-sided Warbler.

Breeding range.—Throughout New England, New York, and Pennsylvania the chestnut-sided warbler is one of the commonest breeding warblers. It also breeds regularly, though not commonly, in parts of northern Ohio, Indiana, and Illinois, and westward to eastern Nebraska, nesting in the latter State as far south as Omaha. It has been taken once in Wyoming. Its northward range is at least to Newfoundland, Ontario, and the Saskatchewan. South of its normal breeding range it has been noted in summer at St. Louis and at Munger in southeastern Missouri, and a few times in the lower Wabash Valley of Illinois and Indiana. It has been once recorded as breeding at Sea Isle City, near the coast at the extreme southern end of New Jersey. In the Allegheny Mountains the bird breeds much farther south. During the breeding season it is common to abundant in the mountains of North Carolina at an elevation of 2,000–4,000 feet and not uncommon at corresponding elevations in the northwestern part of South Carolina. It probably breeds sparingly in northern Georgia.

Winter range.—The chestnut-sided warbler winters from Guatemala to Panama, both on the coast and in the lower mountains. It is abundant along the coast of southeastern Nicaragua[a] and less common throughout Guatemala. There are four records of its occurrence in Honduras—at San Pedro and Truxillo,[b] on the north coast, and on the islands of Bonacca[c] and Ruatan.[c] The only record for Yucatan[d] is of a specimen taken at Merida April 18, 1865. There are records from Costa Rica which denote that the species occurs in September on the high plateaus,[e] is abundant during the fall migration, and rare in the spring at San José[f] (3,500 feet), and was common during the fall of 1895 on the Pacific slope at Miravalles[g] (1,400–2,000 feet). The only Mexican records, probably all made during migration, are of specimens taken in April at Playa Vicente[h] on the hot lowlands of Oaxaca; on May 16, 1888, at Canyon Cavelleros, Tamaulipas; and at Jalapa,[i] State of Vera Cruz.

Late writers have commonly included the Bahamas in the winter range of the chestnut-sided warbler. Nearly half a century ago Bryant recorded that he saw in May a few of the species on the island of New Providence. These were undoubtedly spring migrants that had wandered far out of their usual course. Years afterward a writer quoted this note as a winter record, and his mistake has been perpetuated. Other records of wandering birds were made at the Bermudas in the spring of 1901; at Enterprise, on the east coast of Florida, soon after the middle of March; near the mouth of the Suwanee River, Florida, April 10, 1892.

Spring migration.—The records of spring migration of the chestnut-sided warbler in the United States south of the latitude of Washington and St. Louis are entirely without regularity. For the sake of having the material on record, the dates are here given:

Highlands, N. C., April 21, 1886; Raleigh, N. C., April 27, 1886, April 30, 1890; Asheville, N. C., April 29, 1894, April 26, 1899;

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[a] Richmond, Proc. U. S. Nat. Mus. XVI, p. 484, 1893.

[b] Ridgway, Proc. U. S. Nat. Mus. X, p. 579, 1888.

[c] Salvin, Ibis, p. 249, 1888.

[d] Lawrence, Ann. Lyc. Nat. Hist. IX, p. 200, 1869.

[e] Cabanis, J. f. Orn., p. 328, 1860.

[f] Cherrie, Auk, VII, p. 336, 1890.

[g] Underwood, Ibis, p. 433, 1896.

[h] Sclater, P. Z. S., p. 374, 1859.

[i] Sclater, P. Z. S., p. 363, 1859.

Kirkwood, Ga., April 23, 1893, April 23, 1894, April 27, 1895, April 17, 1896, April 30, 1897, April 26, 1898, April 24, 1900, April 30, 1901, average, April 25; Rising Fawn, Ga., April 29, 1885; Shellmound, Miss., April 15, 1892; Rodney, Miss., April 28, 1890; Bayou Sara, La., April 22, 1887; Mount Carmel, Mo., April 23, 1885, April 25, 1886; St. Louis, May 3, 1882, April 27, 1883, May 6, 1884, April 29, 1885, May 11, 1886, May 8, 1887, May 5, 1888; lower Rio Grande, Tex., May 13, 1878; Brownsville, Tex., April 17, 1890; Corpus Christi, Tex., May 1, 1884, April 22, 1891, April 19 and 29, 1900. The species is a rapid migrant, being present scarcely more than three weeks during spring migration at any point in the Gulf States. North of this district some records of average date of arrival are: Frenchcreek, W. Va., May 2; Washington, May 3; Beaver, Pa., May 2; Renovo, Pa., May 3; southeastern New York, May 6; Boston, May 6; southern New Hampshire, May 8; Lewiston, Me., May 12; Montreal, May 17; Scotch Lake, New Brunswick, May 23; Brookville, Ind., May 4; Chicago, May 6; Petersburg, Mich., May 6; southern Ontario, May 6; Parry Sound district, Ontario, May 11; Ottawa, May 14; Grinnell, Iowa, May 5; Lanesboro, Minn., May 9; Minneapolis, Minn., May 12; Elk River, Minn., May 14; northern Minnesota, May 19; Aweme, Manitoba, May 20. The arrival of the species in 1895 at Halifax, Nova Scotia, was noted on May 24.

Fall migration.—Migrating chestnut-sided warblers were noted at Englewood, N. J., July 26, 1887; Washington, August 10, 1889, and Frenchcreek, W. Va., September 6, 1892. The earliest recorded arrival of the species in fall at Raleigh, N. C., was on August 17, 1891. In Chester County, S. C., the bird has been noted as early as August 16. The first arrivals were noted at San José, Costa Rica, September 28, 1889, and September 21, 1890. The bulk of the species passes through the Carolinas in September, reaches the Gulf coast the latter part of the month, and arrives at Costa Rica by the middle of October. The bird was taken at Truxillo, Honduras, September 26, 1887. The last southbound migrants were noted at Ottawa September 12, 1885; St. John, New Brunswick, September 10, 1895; Berwyn, Pa., October 8, 1891; Washington, September 29, 1889; and Frenchcreek, W. Va., September 28, 1890. In the Southern States stragglers occur until after the middle of October. It is thus seen that at the south end of the Allegheny Mountains the fall migration of the chestnut-sided warbler lasts fully two months, while the spring migration occupies not more than three weeks.

Fall migration in the Mississippi Valley is not very different from that in the East. The earliest recorded arrival at St. Louis was on August 24, 1896, and the average date of earliest arrival at New Orleans for several years was September 15. Chestnut-sided warblers have been noted as late as August 24, 1901, at Aweme, Manitoba; September 15, 1889, at Lanesboro, Minn.; September 25, 1887, at Grinnell, Iowa, and September 26, 1895, at Chicago.

The migration route of the species across the Gulf of Mexico appears to agree closely with that of the cerulean warbler.

660. **Dendroica castanea** (Wils.) Bay-breasted Warbler.

Breeding range.—The bay-breasted warbler breeds in northern New England, Nova Scotia, southern Ontario, northern Michigan, Manitoba, and north to Hudson Bay and Newfoundland; also probably in northern Minnesota. It was taken by one of the parties of the Biological Survey at Oxford House, Keewatin, July 3, 1900, and at Fort Chippewyan May 28, 1901. It is thus strictly a bird of the Canadian fauna, except that a few nest in southern Ontario.

Migration range.—There are three published records of the occurrence of the bay-breasted warbler in migration in Texas,[a] a specimen in the American Museum of Natural History was taken at Corpus Christi, Tex., May 1, 1882, and one struck the light at Port Bolivar, Tex., May 6, 1893. The bird is not recorded as occurring in the West Indies, nor in Florida, Alabama, or Georgia. It is so rare in Chester County, S. C., that Loomis saw it but twice—May 14, 1887, and May 5, 1888—in all his years of collecting. It is not included in Smithwick's list of North Carolina birds, and Brimley has seen but one at Raleigh—September 17, 1887. The species is certainly uncommon along the south Atlantic coast, and, though more common northward from Virginia, is very irregular in different years. In the Ohio Valley it is also irregular, and varies each year from rare to quite abundant. It is a regular, but not usually common, migrant in spring and fall in the Mississippi Valley.

The edge of the forests in Minnesota marks the normal western limit, while Iowa and Missouri mark the western boundary in their respective latitudes. A wanderer was taken in May, 1888, at Pierre, S. Dak., by one of the parties of the Biological Survey; Eugene Coubeaux took one May 24, 1903, at Big Sandy, Mont.; and the species is a rare migrant in Assiniboia west to Medicine Hat. The earlier records of an occurrence in Nebraska have not been verified by later observers, and the bird is not recorded from Kansas.

Winter range.—All the winter records of the bay-breasted warbler come from a rather restricted area in Colombia, South America, and the Isthmus of Panama. In the latter district the species is not uncommon. In Colombia it has been taken at Medellin[b] and Naranjo[c] in the valley of the Magdalena; at Remedios[a] in the valley of the Cauca, and at Bucaramanga[b]—all localities in the forest region at 2,000 to 3,000 feet altitude. In fall migration it has been secured at Bonda[c] on the north coast. West of Panama the records of its occurrence are meager. It has been recorded once from Costa Rica,[d] as would be expected from its occurrence in Veragua, Panama, close to the Costa Rican boundary. It has been taken on the island of Ruatan,[e] Honduras, and was recorded by Sclater and Salvin from Guatemala.[f] A specimen in the U. S. National Museum is marked as taken in Guatemala by Taylor. The species was long regarded as a bird of Mexico on the strength of a specimen recorded as taken by Sumichrast at Tehuantepec City[g] October 19, 1869. This specimen, which is still in the U. S. National Museum, is really a specimen of *D. striata.* At the present time there is no sure record of the occurrence of *D. castanea* in Mexico.

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[a] Merrill, Proc. U. S. Nat. Mus., I, p. 124, 1878. Dresser, Ibis, p. 478, 1865. Nehrling, B. N. O. C., VII, p. 9, 1882.

[b] Sharpe, Cat. Birds Brit. Mus., X, p. 322, 1885.

[c] Wyatt, Ibis, p. 322, 1871.

Spring migration.—No consistent idea of the spring migration of the bay-breasted warbler can be drawn from the scanty records of its appearance in the southern United States. There are few or no dates for April. During the first week of May the bird appears in the district south of St. Louis and Washington, and thence, proceeding leisurely northward, arrives on the average at Beaver, Germantown, and Renovo, Pa., May 13; southeastern New York, May 8; central Connecticut, May 15; central Massachusetts, May 16; southern Maine, May 18; and St. John, New Brunswick, May 21. It was noted at Pictou, Nova Scotia, May 23, 1895. The movement of the species west of the Alleghenies is at about the same time, the average date of the first seen at Chicago being May 5; in southern Wisconsin, May 11; in southern Ontario, May 12; at Ottawa, May 17, and at Aweme, Manitoba, May 16.

Fall migration.—The return migration of the bay-breasted warbler begins in August. During six years of observation at Chicago the first migrant was seen on the average on August 27, the earliest date being August 13, 1896. Other early dates are September 7, 1903, at Beaver, Pa., and August 26, 1887, at Englewood, N. J. Most of the migration in the central part of the United States takes place during September, and by October the bay-breasts have reached South America. Last migrants have been noted at Aweme, Manitoba, August 22, 1901; Lanesboro, Minn., September 15, 1889; Ottawa, September 16, 1888; St. John,

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[a] Sclater and Salvin, P. Z. S., p. 494, 1879; Sharpe, Cat. Birds Brit. Mus., X, p. 650, 1885.

[b] Berlepsch, J. f. Orn., p. 282, 1884.

[c] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 177, 1900; Auk, XVII, 367, 1900.

[d] Zeledon, Proc. U. S. Nat. Mus., VIII, p. 105, 1885.

[e] Salvin, Ibis, p. 249, 1888.

[f] Sclater and Salvin, Ibis, p. 11, 1859.

[g] Lawrence, Bull. Nat. Mus., No. 4, p. 15, 1876.

New Brunswick, September 1, 1890; Chicago, October 4, 1897, and at Germantown, Pa., October 19, 1885. It will be seen at once that there is no easy solution of the line of migration of the bay-breasted warbler between its summer and winter homes. The data are so meager that the line of migration must be judged from the movements of other species. The principal route seems to be much the same as that taken by *D. cerulea* and *D. pensylvanica.* The bay-breasts apparently make the long flight across the Gulf of Mexico to the highlands of Guatemala and Honduras, and then follow the mountains to Panama and Colombia.

661. **Dendroica striata** (Forst.). Black-poll Warbler.

Breeding range.—The summer home of the black-poll warbler is entirely within the Canadian and Hudsonian zones. The species breeds in northern Maine, the mountains of northern New England and New York, northern Michigan, and Manitoba, and ranges north to the Gulf of St. Lawrence, Newfoundland, the limit of tree growth in Labrador and Hudson Bay, and northwest to Alaska. The southernmost breeding record is at Seven Lakes, near Manitou, Colo., at an altitude of 11,000 feet. The black-poll occurs regularly though sparingly in Colorado, less commonly in New Mexico (in migration), and northwest through Montana to Log Cabin, Yukon, and Cook Inlet, Alaska.

Winter range.—The black-poll warbler winters in the northern part of South America, ranging east to the Oyapock River[a] in eastern French Guiana and to Para, Brazil.[b] It has been taken in November and January in British Guiana[c] at an altitude of 3,700 feet; it has also been secured in fall migration near Merida,[d] Venezuela, at 5,400 feet, and several times in the vicinity of Bogota,[e] Colombia, at probably not much less than 9,000 feet. During the fall migration of 1898 many specimens were taken from October 7 to November 22 at Bonda,[f] on the northern coast of Colombia, and at Mamatoca[g] October 13, and at Cantilito[g] October 14. A large number of specimens were secured from November 21 to April 25 at various places in the lower portions of the valleys of the Orinoco[h] and Caura[h] rivers, which shows that the region is one of the main winter homes of the black-poll warbler. There are records of the occurrence of the species on the Rio Negro[i] of Brazil, and at Archidona[a] and Sarayacu,[b] central Ecuador. A straggler was once taken at Valdivia,[c] Chile.

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[a] Sharpe, Cat. Birds Brit. Mus., X, p. 650, 1885.

[b] Spix. Av. Bras. I, 75, 1824; Burmeister, Thiere Bras. III, 120, 1856.

[c] Salvin, Ibis, p. 202, 1885. Quelch, Timehri, X, p. 261, 1896.

[d] Sclater & Salvin, P. Z. S., p. 780, 1870. Ernst, Flora & Fauna Venez. 301, 1877.

[e] Sclater, P. Z. S., p. 143, 1855. Baird, Rev. Am. Birds, p. 192, 1865.

[f] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 177, 1900; Auk, XVII, p. 366, 1900.

[g] Specimens in Carnegie Museum, Pittsburg, Pa.

[h] Berlepsch & Hartert, Novit. Zool., IX, p. 9, 1902.

[i] Sharpe, Cat. Birds Brit. Mus., X. p. 327, 1885. Pelzeln, Orn. Bras. 69, 463, 1869.

The black-poll warbler does not winter in the Bahamas or any other part of the West Indies—a point that needs to be emphasized, as there is a tendency on the part of writers to consider all records south of the United States as wintering records. The bird is, however, a common visitor to the Bahamas both in spring and fall. It has been taken at points ranging from the northern Bahamas to Watlings Island on the east, Anguila[d] on the west (where it was found abundant May 10–11, 1893), and Inagua at the south. In Cuba it occurs in migration in spring and fall, usually in small flocks. It has been recorded also from Jamaica and Porto Rico. It was seen in great numbers October 10, 1882, on Guadeloupe Island;[e] and has been taken on Santa Lucia,[f] Barbados,[g] Tobago,[h] and Trinidad,[i] the latter just beyond the extreme end of the West Indies and near the northern coast of eastern Venezuela.

The specimen of the black-poll warbler taken at Tehuantepec City, and noticed under *D. castanea*, furnishes the only record for Mexico, and was undoubtedly a straggler.

Spring migration.—In the eastern part of the United States the black-poll warbler is well known as a late migrant—one of the latest among the warblers. There are no records of its being observed in March anywhere north of its winter home, not even in the West Indies. Gundlach says that when black-polls occur in spring in Cuba, they are found in April. Bonhote noted the first spring arrivals on the island of New Providence, Bahamas, April 21, 1898, and at Cay Lobos light April 15, 1901. Winch took his first specimen on the island of Inagua April 23, 1891. The dates of Bonhote are later than some on which the species has been noted at the Florida lighthouses. It struck Sombrero Key lighthouse April 14 and 15, 1885; April 24 and 25, 1887, and April 18 and 30, 1888.

Some dates of arrival in the southeastern part of the United States are: Tortugas, April 26, 1890; Suwanee River, Florida, April 24, 1893; Frogmore, S. C., April 29, 1885; Darien, Ga., April 28, 1890; Rising Fawn, Ga., April 17, 1885; Shelby, Ala., April 27, 1898. A black-poll warbler came aboard a ship 50 miles off the coast of South Carolina, April 19, 1898. The average date of earliest arrival from the south during nine years' observation near Atlanta, Ga., is April 30, with extremes of April 23, 1894, and May 10, 1901. The seven years' average at Raleigh, N. C., is May 2, with extremes of April 29, 1887, April 30, 1891, and May 5, 1890. The average of five years in the mountains at Asheville is May 5, with extremes of April 29, 1893, and May 10, 1890. The dates of first arrival for several successive years at St. Louis are remarkably uniform—April 29, 1884, 1885, and 1887, May 1, 1886, and April 28, 1888. Thus arrival from the south at St. Louis is three days earlier than at Raleigh; this in spite of the supposition that the birds come from the southeast and the fact that St. Louis is farther north by 200 miles than the North Carolina point of observation. Compared with dates of arrival near Atlanta, Ga., those at St. Louis show a difference of but one day in the average, although nearly 500 miles measure the difference in distance along the southeast and northwest line of migration between the two points. Along the Atlantic slope some records of average date of arrival are: Washington, May 6; Philadelphia, May 8; southeastern New York, May 15; central Connecticut, May 15; Boston, May 17; southern New Hampshire, May 21, and Lewiston, Me., May 23. The first arrival was noted at Montreal, May 28, 1892; Godbout, Quebec, June 6, 1884 and 1887, and North River, Prince Edward Island, June 10, 1890. Records of averages west of the Alleghenies are: Chicago, May 13; southern Wisconsin, May 16; southern Michigan, May 14; southern Ontario, May 17, and Ottawa, May 21. Near the Mississippi the dates of arrival are somewhat earlier, averaging, at St. Louis, April 30; Keokuk, Iowa, May 9, and Lanesboro, Minn., May 16. The migration route thence bears strongly northwestward, and the black-polls reach Alaska in the last week of May.

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[a] Goodfellow, Ibis, p. 314, 1901.

[b] Sharpe, Cat. Birds Brit. Mus., X, p. 650, 1885.

[c] Landbeck, Arch. für Naturg., p. 56, I, 1864. Anal. Univ. Chile, XXIV, p. 336, 1864. Philippi, Anal. Univ. Chile, XXXI, pp. 257, 328, 1868. Sclater, P. Z. S., p. 337, 1867. James, New List Chilian Birds, p. 2, 1892. Reed, Catálogo de las Aves Chilenas, p. 6, 1896. Philippi, Anal. Mus. Nac. Chile, p. 41, 1902.

[d] Cory, Auk, VIII, p. 352, 1891.

[e] Lawrence, Proc. U. S. Nat. Mus., VIII, p. 622, 1885.

[f] Allen, B. N. O. C., V, p. 166, 1880.

[g] Feilden, Ibis, p. 482, 1889.

[h] Sclater, Cat. Am. Birds, p. 32, 1862.

[i] Sclater, Cat. Am. Birds, p. 24, 1862.

The black-poll warbler is common along the Mississippi from St. Louis northward, while west of the mouth of the river, along the Gulf coast, and in Texas it is almost unknown. It is fairly common westward to the Missouri River, but is scarcely or only locally known in the Plains region. Of more than twenty observers in Kansas only two report seeing this species, and one of these saw it but once in eleven years of active observation. The earliest arrival noted in Kansas was May 12, 1885, at which time the birds were already much farther north along the Mississippi River. At the western edge of its range along the foothills of the Rocky Mountains the species is rare. It reaches the Arkansas River in the first week in May and northern Colorado a week later. There can be no doubt that the great bulk of the western individuals of the species pass north along the forest region of the Mississippi and through the corresponding region of Minnesota.

The main body of migrants reaches the southern part of the United States early in May. About half of the records of spring migrants striking the Florida lighthouses fall between May 1 and May 9. The species was especially common in the spring of 1888, when it struck May 4, 5, 6, 8 (about 50 birds), and 12. In the previous spring it was most common May 18, 19, and 20. It was abundant on the island of Auguilla May 10 and 11, 1891, and very abundant on the island of New Providence May 1–10. On the neighboring Andros Island the last bird to pass north was noted May 23, 1890, a date which does not differ much from the dates of passage of the latest migrants at various points on the mainland. The last migrant was noted at Raleigh May 28, 1886, May 26, 1888, May 23, 1889, and May 29, 1891; at Asheville May 30, 1891, and June 1, 1894, and at St. Louis May 22, 1885, May 18, 1886, and May 19, 1887.

Fall migration.—Some of the black-poll warblers have the most distinctly northwest and southeast fall migration route of any of the wide-ranging species. Individuals that nest in Alaska winter in northern South America without passing through either Mexico or Central America, so far as known. The species uses the Florida and West India routes, and is common enough to be fairly well known along the entire way.

The black-polls that summer in the northeastern United States nest in June, and begin in August their fall migration, and have been seen as early as August 30 at Ossining, N. Y.; August 27, 1891, at Beaver, Pa.; August 30, 1887, at Englewood, N. J., and September 1, 1889, at Washington. The western birds have appeared at Chicago August 23, 1897; Cleveland, Ohio, August 27, 1886, and St. Louis, September 12. In 1881 the earliest date on which a fall migrant struck Fire Island light on the south shore of Long Island was September 9. The earliest date of first arrival in seven years at Raleigh, N. C., was September 24, and the average October 2. The black-polls linger late in the North, having been noted at Great Bear Lake, Mackenzie, August 29, 1904; Ottawa September 27, 1887; Chicago, October 12, 1902; Portland, Conn., October 20, 1888; Philadelphia, October 29, 1887; and Washington, October 20, 1889.

The black-poll warbler is easily attracted to lighthouses. At Sombrero Key, Fla., it has struck the light on thirty-five different nights in five consecutive years, the earliest certain date being September 25, 1888. Most fall migrants strike in the first half of October, and about a third of the records are of single birds. Sometimes, however, the black-polls are very abundant. In 1887 they struck on every night from October 13 to 17, being especially numerous October 14 and 16. The keeper of the light says that on October 14 the birds flew low, and that 40 were seen at one time on the lantern, 8 of which were killed. After sunrise there were found on the lower platform 20 live and 87 dead birds. Few of these fell from the lantern, as the wind would have swept them overboard beyond the balcony. They were killed by striking, not the lantern, but the framework of the tower. This count probably represents not more than a fourth of the injured birds, as the Sombrero Key light is surrounded by water, into which most of the birds that strike soon flutter or fall. Large numbers of black-polls have also perished at two lighthouses on the south shore of Long Island. At Shinnecock, September 30, 1883, 59 dead birds were found around the light, and on the same day 230 were counted at the foot of Fire Island light. The latest date of striking at these northern lighthouses is October 20, 1882. The latest dates of passing fall migrants at Raleigh are November 5, 1886, and November 1, 1889. Some late dates from the Florida lighthouses are November 16, 1887, November 4 and 10, 1888, and November 2 and 7, 1891. On the island of New Providence, Bahamas, one bird was seen as late as November 26, 1898.

The recorded appearance of the black-poll warbler at Bonda, Colombia, on October 7 shows that the early migrants do not linger on the road. The further facts that they are rare or accidental in Jamaica, are not known in Haiti, and are not nearly so common in Cuba as might be expected from their numbers in the southeastern part of the United States indicate that quite a large proportion of the species make but short stops in the West Indies south of the Bahamas. Black-polls appear to make a regular stopping place of the northern Bahamas, but, except for occasional flocks, pass over the southern islands without stopping. The records are not yet complete enough to show whether the birds of Guiana come overland from Colombia or by way of the islands.

662. **Dendroica blackburniæ** (Gmel.). Blackburnian Warbler.

Breeding range.—The summer home of the Blackburnian warbler is in the forests of the northern portions of Minnesota, Wisconsin, Michigan, New York, and New England. The species is also common in the Catskill Mountains of New York and in some of the elevated parts of Massachusetts, and a few also breed in the Alleghenian life zone of that State and perhaps Connecticut. In Pennsylvania and through the southern Allegheny Mountains to South Carolina, in both Canadian and Alleghenian zones, a few also summer. Northward the species extends to Cape Breton, northeastern Quebec, central Ontario, southern Keewatin (Severn House and Trout Lake), and Manitoba.

Migration range.—The range in migration extends westward to the plains of eastern Texas, eastern Kansas, and eastern Nebraska, though the bird is rare west of the forest region of the Mississippi. It has been taken as an accidental visitant in Utah and New Mexico.

Winter range.—A small body of Blackburnian warblers winter at an elevation of 4,000 to 6,000 feet in the highlands of Guatemala to as far south as Duenas. A few remain as far north as Merida, Yucatan, and Orizaba, Vera Cruz. The species has been taken at Tehauntepec City, Oaxaca, the only point on the Pacific coast north of Costa Rica at which its presence has been recorded. In migration it has been seen on the lower plains of San Luis Potosi and at Tampico. The bulk of the species seem to pass through Honduras[a] and apparently continue south until they reach the mountain sides, and then follow the mountain chain through Costa Rica and Panama. Unfortunately the data at hand are such that the wintering records can not be separated from those of migration. It seems certain, however, that only a few of the species remain farther north than Costa Rica, and but few of the thousands that pass through that country remain to winter there. The real winter home of the Blackburnian warbler is in South America, from central Colombia to central Peru. In Colombia directly east of the Isthmus of Panama the species has been found to be very common in winter from Pamplona,[b] Medellin,[c] and Bogata[d] southward. It frequents the heavy forests, and is common above 6,000 feet nearly to 10,000 feet, especially just below its highest range. It does not usually range below 5,000 feet, but has been once taken only a little above 2,000 feet. A few individuals move northeastward and have been taken at Las Nubes[e] and Valparaiso[e] in the Santa Marta region of northern Colombia, and at Merida[f] in western Venezuela—in both districts at 4,500–5,500 feet elevation. In Ecuador[g] the species occurs on both slopes of the Andes, more commonly at altitudes between 4,500 and 7,000 feet—rarely to 9,000 feet—though during both spring and fall migrations it has been found at 3,500 feet. In February, 1899, it was "as thick as autumn leaves" at Papallacta,[h] eastern Ecuador, at 11,500 feet. It is common in northern Peru[i] at 3,700–7,000 feet, and has been traced as far south as the mountains near Lima, in central Peru.

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[a] Salvin, Ibis, p. 249, 1888.

[b] Wyatt, Ibis, p. 322, 1871.

[c] Sclater and Salvin, P. Z. S., p. 494, 1879.

[d] Sclater, Cat. Am. Birds, p. 30, 1862. Salvin, Cat. Strickland Coll., p. 90, 1882. Sclater, P. Z. S., p. 143, 1855.

[e] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 178, 1900; Auk, XVII, p. 367, 1900.

[f] Sclater and Salvin, P. Z. S., p. 780, 1870. Ernst, Flora and Fauna, Venez, 301, 1877.

[g] Sclater, P. Z. S., p. 111, 1854; p. 64, 1858; pp. 64 and 84, 1860; Ann. and Mag. Nat. Hist., XVI, p. 281, 1855. Allen, Bull. Am. Mus. Nat. Hist., II, p. 69, 1889. Orton, Am. Nat., V, p. 623, 1871. Hartert, Novit. Zool., V, p. 480, 1898. Berlepsch and Taczanowski, P. Z. S., p. 286, 1884; Taczanowski and Berlepsch, P. Z. S., p. 74, 1885. Salvadori and Festa, Boll. Mus. Zool. Torino, No. 357, p. 8, 1899. Sharpe, Cat. Birds Brit. Mus., X, pp. 291 and 646, 1885.

[h] Goodfellow, Ibis, p. 314, 1901.

[i] Taczanowski, P. Z. S., p. 508, 1874; p. 223, 1879; p. 6, 1882. Orn. du Perou, I, p. 464, 1884. Berlepsch and Stolzmann, P. Z. S., p. 331, 1896.

Most accounts of the species include the Bahamas in its winter range, but the only records from these islands are of one occurrence in April[a] and one in October,[b] both during migration and undoubtedly accidental. It is not probable that any individual spends the winter within many hundred miles of the Bahamas. The only other record made in the West Indies is one of accidental occurrence on the island of Tobago.

Spring migration.—Records of the Blackburnian warbler from points south of the United States are not sufficient to permit tracing the movements of the species northward to the southern boundary, nor is there any correspondence of dates of its occurrence until it has advanced many miles inland. The bird is common in spring at Asheville, N. C., where the average date of arrival for five years is April 14. In Chester County, S. C., it is a rare spring migrant, while at Raleigh, N. C., it was not seen in spring during many years' collecting. At both these places, however, it is common in the fall. At White Sulphur Springs, W. Va., the average date of spring arrival for several years is April 22, and at French Creek, W. Va., April 27, the earliest dates at the two places being April 17, 1893, and April 23, 1891, respectively. The average of first dates at Washington is May 6; Beaver, Pa., and Alfred, N. Y., May 4; Portland, Conn., May 8; northern Massachusetts, May 9; southern New Hampshire, May 8; southern Maine and Montreal, May 16. Records of first arrival are: Quebec, May 18, 1901; Petitcodiac, New Brunswick, May 18, 1887; and Pictou, Nova Scotia, May 30, 1894. The three years' average of closely agreeing dates of arrival in central Mississippi is April 14; the earliest date at New Orleans is April 8, 1900. Brookville, Ind., is reached on the average May 2, Chicago May 3, southern Michigan May 6, southern Ontario May 7, Parry Sound District, Ontario, May 8, Ottawa May 11, southern Wisconsin May 9, Lanesboro, Minn., May 15. At Aweme, Manitoba, an arrival was noted on May 20, 1899.

The average rate of migration of the Blackburnian warbler from the mouth of the Mississippi to its source, where the bird breeds, appears to be scarcely 25 miles per day. The species is a rare migrant in Texas, and the records of arrival are not regular. Among them may be mentioned the following: Brownsville, April 20, 1890; Corpus Christi, March 13, 1899; Refugio County, April 17, 1899; Bee County, April 20, 1887; San Antonio, March 31, 1880, April 1, 1890; Kendall County, March 31, 1880; Houston, April 20. In correspondence with these dates, rather than with those of Mississippi, Indiana, and Minnesota, are the dates of earliest arrival at St. Louis—May 10, 1884,

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[a] Bryant, Proc. Bost. Soc. Nat. Hist., VII, p. 110, 1859.

[b] Cory, Auk, IX, p. 49, 1892.

May 12, 1885, May 6, 1886, and May 12, 1887. The latest dates in spring at which the species was observed south of the United States are as follows: Northern Peru, March 25; western Ecuador, March 17; northern Ecuador, April; Santa Marta region of Colombia, March 29; San Luis Potosi, Mexico, first week in May. Late records of occurrence in spring in Texas are May 3 on the Rio Grande; May 11, 1900, near Brownsville, and May 15, 1898, at Dallas. A female was killed in May, 1876, near Fort Bayard,[a] N. Mex., far out of the usual range.

Fall migration.—The fall migration of the Blackburnian warbler begins in August, the southward movement of the Allegheny breeding birds having its inception early in the month. Fall migrants have been noted as follows: Chicago, August 12, 1900; Englewood, N. J., August 11, 1887; Washington, August 15, 1886; in Chester County, S. C., by August 8, and at Bay St. Louis, Miss., August 11, 1898. The first arrival from the north was noted at San José,[b] Costa Rica, August 17, 1890, in which year the species again appeared on August 20 and was common until October. The August birds of Costa Rica represent the van of south migration. By the middle of October the earliest migrants have reached Venezuela and Ecuador. The main army of the Blackburnians pass the south end of the Alleghenies between September 25 and October 5, and during the first two weeks of October are moving through San José, Costa Rica, and by early in November are settled for the winter in Peru. Some records of late migrants along this route are: Toronto, October 1, 1898; Philadelphia, September 28, 1890; Washington, October 5; Lynchburg, Va., October 9, 1898; Raleigh, N. C., October 8, 1887, October 4, 1888, October 13, 1891; Asheville, N. C., September 15, 1890, September 20, 1894; Chester County, S. C., October 22; Tarpon Springs, Fla., October 15, 1886; Key West, October 21, 1887. Along the westward route the latest migrants leave the region of Lake Michigan about the 1st of October. The latest fall date at St. Louis is October 2, 1896; latest at New Orleans are October 9, 1896, October 18, 1897, and October 18, 1901. Cherrie found no Blackburnians wintering at San José,[c] Costa Rica, where the species disappeared soon after the middle of October and did not reappear until spring at which time it was rare.

One of the strange features of the life-history of the Blackburnian warblers which winter in South America is the length of time spent by them in their winter home, notwithstanding the fact that the individuals which breed in Canada have at least 3,500 miles to travel twice each year. The species is common from October to March in northern Peru, the latest date on which it has been observed there being March 25, 1878. This gives full five months in Peru and leaves only seven months for the migration to and from North America and the entire breeding season. If this latter covers not less than ten weeks, then during the rest of the year—more than a third—the bird must be traveling at an average rate of 50 miles per day.

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[a] Stevens, B. N. O. C., III, p. 93, 1878.

[b] Cherrie, Auk, VIII, p. 278, 1891.

[c] Cherrie, Auk, VII, p. 336, 1890.

663. **Dendroica dominica** (Linn.). Yellow-throated Warbler.

Breeding range.—The yellow-throated warbler is a species of quite limited extension. Its range is east of the Allegheny Mountains. North of Maryland the bird is rare or casual, though it breeds near the Choptank River in southwestern Delaware. It breeds in the Carolinian and Austroriparian zones, and seems to desert in summer the tropical zone of southern Florida.

Winter range.—The southernmost recorded winter home of the yellow-throated warbler is the island of Jamaica. Since the species does not move north until early March, the Jamaican individuals spend about seven months of the year in their winter home. The bird is also a winter resident of the Bahamas, Cuba, Haiti, Porto Rico, and Grand Cayman, and there is one record for Yucatan. It winters abundantly in southern Florida, less commonly in the northern part of the State, and locally along the Atlantic coast to South Carolina.

Spring migration.—The yellow-throated warbler is one of the early migrants. Its arrival at Gainesville, Fla., has been noted on March 2, 1887, and it has been recorded as abundant by March 5 near Jacksonville. The earliest dates of striking at the lighthouse at Sombrero Key, Fla., are March 28, 1887, March 11, 1888, and March 3 and 11, 1889. Reports do not show that this species is ever present at the lighthouses in large numbers, fifteen in one night being the highest number observed. Small parties pass for several weeks, but the spring migration is not extended like that of fall. All the recorded spring observations of the bird at the lighthouses are included between March 3 and April 4. There is a greater difference between the time of spring arrival at Raleigh, N. C., and that at Asheville, N. C.—both places in the same latitude, one on the plains and the other in the mountains—than in the case of any other species. At Raleigh the average date of arrival during fifteen years is March 26, with extremes of March 20 in 1894 and April 1 in 1885, 1887, 1891, and 1901. There was also an unusually early migrant seen March 13, 1890. At Asheville the average for four years is April 21, with extremes of April 13, 1893, and April 26, 1894. Eggs have been taken in southeastern Georgia April 24 and fully fledged young in northern Florida early in June.

Fall migration.—An early breeder, the yellow-throated warbler is ready to migrate before the middle of summer. It is the first migrant of all the birds to reach Cuba, where it arrives at the end of July and becomes abundant in August. At Key West, Fla., where it does not breed, the arrival of the bird has been noted July 25. Yet there is no record of its striking at the Florida lighthouses before September 13. Gosse records its arrival in Jamaica August 18, and from this early date some writers have thought that it might breed on the island; but in the light of the dates just given it will be seen that Gosse's record corresponds with the migratory movements of the species in Florida and Cuba. As might be expected from the foregoing records, the yellow-throated warbler deserts at an early date its summer home. The last fall bird was reported at Washington September 4, 1890; Asheville, N. C., September 15, 1890; and at Raleigh, N. C., September 17, 1886, September 8, 1888, September 12, 1889, September 10, 1890, and September 4, 1891. Throughout October the birds strike the Florida lighthouses, and even as late as November 7, 1891, one was killed. The time occupied by the species in its fall migration exceeds the entire period extending from the beginning of the spring migration to the date when its early hatched young are fully fledged.

663a. Dendroica dominica albilora Ridgw. Sycamore Warbler.

Breeding range.—The sycamore warbler is the western form of the yellow-throated warbler, and is confined in summer principally to the timbered parts of the central and lower Mississippi Valley. The center of abundance is the lower Ohio Valley. Thence the species ranges less commonly to the northern boundary of the Carolinian life zone in West Virginia, Ohio, southern Michigan, and southern Wisconsin, west to southeastern Nebraska and eastern Kansas, and south to eastern Texas. The eastern range is bounded by the Allegheny Mountains. The bird breeds throughout its range in the United States except the tropical part of the lower Rio Grande Valley of Texas. The area of the summer home of the sycamore warbler is therefore fairly rectangular and is approximately 800 miles north and south by 600 miles east and west.

Winter range.—The sycamore warbler is one of the few species of the eastern United States found farther west in winter than in summer. But the strangest feature of its life history is its wide longitudinal distribution in winter. Its winter home extends from the Pacific coast of Mexico in Tepic,[a] and Colima,[b] to Nicaragua[c] and Costa Rica,[d] a distance of 1,500 miles. It is rare at both these extremes—so rare, indeed, in western Mexico that it was not seen by any of the parties of the Biological Survey, although considerable time was spent in these localities. In winter it is common in southern Vera Cruz, Yucatan, and the Atlantic slope of Guatemala, and less common in Oaxaca and Chiapas. At this season a few birds occur as far north as the lower Rio Grande. During the winter it is commonly an inhabitant of the lower districts and the coasts, occurring for the most part below 4,000 feet; but there are instances, principally in the fall, of birds being seen several thousand feet higher.

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[a] Lawrence, Mem. Bost. Soc. Nat. Hist., II, p. 270, 1874.

[b] Baird, Rev. Am. Birds, I, p. 209, 1865.

[c] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893.

[d] Zeledon, Anal. Mus. Nac. C. R., p. 106, 1887.

Spring migration.—At New Orleans the sycamore warbler is one of the earliest spring migrants. Dates of arrival are March 11, 1894, March 9, 1895, March 7, 1896, and March 12, 1898. The bird became common by March 16, 1895, March 13, 1897, and March 19, 1898. At Helena, Ark., the first arrivals were noted on April 14, 1895, and April 10, 1897; at St. Louis, April 4, 1884, April 6, 1885, April 12, 1886, April 10, 1887, and April 13, 1888; in central Indiana about the middle of April; in southern Michigan about April 20. A migrant was noted at Soto del Marina, Tamaulipas, March 1, 1902. The following Texas dates of earliest arrival are, as usual, irregular: Hidalgo, March 6, 1894; Rockport, March 16, 1892; Refugio County, March 13, 1899; San Antonio, April 9, 1889, March 31, 1890, April 19, 1891; Kerrville, April 10, 1900, April 1, 1901; Dallas, March 12, 1898, March 12, 1899; Gainesville, April 7, 1884, March 22, 1885, March 31, 1886, April 4, 1887. The latest record of the sycamore warbler in spring south of the United States is April 13, 1901, when it was observed on the northeast coast of Yucatan.

Fall migration.—In the fall the Mississippi Valley form is, like the eastern, an early migrant, being one of the first birds to return in autumn to the Rio Grande of Texas. It is recorded as arriving at Orizaba, Mexico, August 10; Chiapas, Mexico, August 13; Colima, Mexico, in August; Duenas, Guatemala, by the middle of August; Bonacca Island,[a] Honduras, and Truxillo,[b] on the mainland, in September; and at San José, Costa Rica, October 4. In the northern part of its range it lingers somewhat later than the eastern form. The last to pass southward do not leave Indiana and Missouri until well into October.

664. **Dendroica graciæ** Baird. Grace Warbler.

The Grace warbler breeds in the mountains of New Mexico, Arizona, and Chihuahua, Mexico, and retires for the winter into northwestern Mexico. Its northernmost extension is in southern Colorado, where it occurs regularly in La Plata County, breeding to 8,500 feet. It has been taken in north central Colorado and southern California, but its occurrence at these points is accidental. It is found in winter as far south as Tepic and Jalisco. In Arizona spring arrivals have been noted as follows: Fort Whipple, April 24, 1865; Pima Co., April 22, 1885; Huachuca Mountains, April 27, 1902, April 12, 1903.

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[a] Salvin, Ibis, p. 250, 1888.

[b] Ridgway, Proc. U. S. Nat. Mus., X, p. 579, 1888.

665. **Dendroica nigrescens** (Towns.). Black-throated Gray Warbler.

The black-throated gray warbler is another of the warblers of the western United States. Its breeding range extends from southern California and southern Arizona north to British Columbia and east to central Colorado, and rises to an altitude of 9,500 feet. The species migrates in winter to Mexico and ranges from Oaxaca and Vera Cruz to as far north as Durango, where it was noted by the parties of the Biological Survey.

Spring migration.—The black-throated gray warbler enters southern California in the first week in April and reaches southern British Columbia by the third week in the month. The earliest dates in southern Arizona and southern New Mexico are included between March 31 and April 9, while the species reaches early in May the northern portion of its range in Colorado.

Fall migration.—The last fall migrants of the species do not leave central California until the first week in October, and do not desert the State until after the middle of the month.

666. **Dendroica chrysoparia** Scl. & Salv. Golden-cheeked Warbler.

This rare species breeds in Texas and retires in winter to Mexico and Guatemala. The winter range is not well known. The known breeding range is a restricted area in south-central Texas north to about latitude 31°. Its arrival near San Antonio, Tex., was noted March 13, 1895, March 10, 1896, March 9, 1897, March 13, 1898, and March 14, 1900—average, March 12.

667. **Dendroica virens** (Gmel.). Black-throated Green Warbler.

Breeding range.—The black-throated green warbler is one of the most abundant of its family. It breeds commonly from southern New England north to the Gulf of St. Lawrence and Newfoundland and in the mountains of Pennsylvania, the Catskills, northern and western New York, Michigan, northern Illinois, Wisconsin, Minnesota, northern Alberta (Edmonton), and southwestern Athabasca (Peace River Landing). It breeds less commonly southward in the higher Alleghenies to South Carolina. It was taken several times near the outlet of Athabasca Lake by one of the parties of the Biological Survey. The range as described shows that the black-throated green warbler belongs to the Canadian zone and the northern part of the Alleghenian.

Migration range.—Western Assiniboia, western Minnesota, eastern Nebraska, and eastern Kansas mark the western limit of the species in migration. West of the heavy forest area of the Mississippi it is rare. Through eastern Texas it is more common, as this is one of its regular migration routes to southern Texas and eastern Mexico.

Winter range.—The winter home of the species is in heavy, low-lying forests, much lower than would be expected from its summer home. The northernmost point from which it has been recorded in winter is Linares, Nuevo Leon (about 2,000 feet altitude). Thence it ranges through the lower districts of Puebla, Vera Cruz, and Chiapas, and eastward to Campeche and Yucatan. The center of abundance during the winter seems to be from the islands off the east coast of Yucatan through northern Guatemala and the southern half of Vera Cruz. The bird passes south in small numbers to the Pacific coast in southern Oaxaca, and to the mountains along the Pacific side in Guatemala. In Vera Cruz it is abundant from 400 to 2,800 feet and is less common to 3,800 feet. During migration it passes higher and has been taken at 6,000 feet in Chiapas and up to 8,000 feet in Hidalgo. There seems to be no record as yet of its occurrence in Honduras, and but one for Nicaragua.[a] In Costa Rica it is not common, but has been taken in several places in the mountains from 1,400 to 4,000 feet. Judging from the records it occurs less commonly in Panama than in Costa Rica, but it has been taken both in the lowlands of the Atlantic slope and on the mountains of the Pacific.

A few scattering records show that the black-throated green warbler is evidently but an accidental visitant in the West Indies, where its occurrence has been recorded in Cuba,[b] Isle of Pines,[c] Jamaica,[d] Watlings Island,[e] Dominica,[f] and Guadeloupe.[g] The species is commonly called a winter resident of Cuba, but is never said to winter in Florida; yet the records of its occurrence in winter in the two places are of a similar sort. Gundlach saw a single bird in January, 1854, in western Cuba, and Atkins saw one in January, 1888, at Key West.

Spring migration.—The earliest recorded date of arrival of the black-throated green warbler in the eastern part of the United States is March 23, 1885, on which date the bird was noted at Pensacola, Fla. The spring records of the species in southern Florida are very few, consisting of one at Tarpon Springs, April 1, 1888, and one at Tortugas, April 26, 1890. In northwestern Florida, on the contrary, on the direct line from the Alleghenies to Yucatan, the bird is quite common in spring.

In 1885 the earliest date of arrival in Chester County, S. C., recorded by Loomis was March 31, while the first birds seen at Rising Fawn, Ga., and Raleigh, N. C., were noted on April 1. The average of earliest spring arrivals for six years at Raleigh is March 30, obtained from the following very even record of first appearances: April 1,

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[a] Nutting, Proc. U. S. Nat. Mus., V, p. 494, 1883.

[b] Gundlach, J. f. Orn., p. 474, 1855.

[c] Cory, Cat. Birds West Indies, p. 118, 1892.

[d] Newton, P. Z. S., p. 552, 1879.

[e] Cory, Auk, IX, p. 49, 1892.

[f] Verrill, Conn. Acad., VIII, p. 350, 1892; Lawrence, Proc. U. S. Nat. Mus., I, p. 54, 1878, and p. 486, 1879.

[g] Lawrence, Proc. U. S. Nat. Mus., VIII, p. 622, 1885.

1885, March 27, 1886, March 28, 1888, March 28, 1889, March 27, 1890, and April 2, 1891. Still earlier dates were March 22, 1897, and 1898. These dates seem very early when compared with those of the first arrival of the species at points immediately north and west. The last week in April is considered an early date for the spring appearance of the species at Washington; the earliest dates on which its arrival in the mountains directly west of Raleigh is recorded are April 13, 1899, and April 15, 1893, the average for three years—1890, 1891, and 1894—being April 30; while at Eubank, Ky., a hundred and fifty miles northwest, on the other side of the mountains, April 9, 1891, April 9, 1894, and April 10, 1895, are the earliest recorded dates of arrival. Average dates of arrival, resulting from several years of observation, are: Washington, D. C., and Renovo, Pa., April 26; Beaver, Pa., and Englewood, N. J., April 30; Alfred, N. Y., May 1; Boston, May 1; central Connecticut, May 3; southern New Hampshire, May 3; southern Maine, May 6; Quebec, May 10; central Nova Scotia and St. John, New Brunswick, May 13; North River, Prince Edward Island, May 17. West of the Alleghenies the dates of arrival are approximately the same as farther east, notwithstanding the fact that the eastern birds have considerably farther to travel than the western. Records of average date of arrival are: Brookville, Ind., April 29; Chicago, May 1; southern Michigan and southern Ontario, May 2; Parry Sound district, Ontario, May 6; Ottawa, May 13; southeastern Iowa, May 5; Lanesboro, Minn., May 7. A black-throated green warbler was seen at Aweme, Manitoba, May 13, 1898; Medicine Hat, Assiniboia, May 17, 1894; Edmonton, Alberta, May 15, 1897; and at Athabasca Lake, June 3, 1901.

Spring migration in Texas is rather early, as the bird winters regularly only a little south of the Rio Grande. One very early individual was seen on February 28, 1894, at Hidalgo, but the species was not again noted until several weeks later. The recorded dates of arrival in Texas are as follows: Corpus Christi, March 23, 1878, March 24, 1891; San Antonio, March 13, 1880, March 20, 1887, March 26, 1889, April 1, 1890, March 26, 1891; Austin, April 1, 1890; Dallas, March 16, 1898, March 17, 1899. It will be noticed that there is no regular progression of dates in Texas from the south northward. This is true not only of the present species, but of almost every other bird whose arrival has been noted sufficiently often and at enough different places to permit comparison. Some dates of the last migrants seen in spring in Texas are as follows: San Antonio, May 23, 1890; Kerrville, May 15, 1900; Dallas, May 15, 1898. Considering how far north of Texas the birds breed, these are rather late dates of passage through the State.

Fall migration.—Since the black-throated green warbler is abundant in migration in the southern Alleghenies and equally common in winter in Yucatan, but nevertheless is rare in southern Florida and still rarer in Cuba, it is evident that the bulk of the species fly across the Gulf of Mexico from the mainland of the Gulf States. Records of occurrence during fall migration in southern Florida are, like those of occurrence in spring, very few. The species was observed at Tarpon Springs, October 15, 1886; Key West, October 14, 1887, and at Sombrero Key, November 10, 1888, when two birds struck the light. In North Carolina the early fall migrants commonly appear during the last week in August. At the same latitude in the Mississippi Valley the dates of first appearance in fall are but a few days later. The first birds to reach the Gulf coast arrive about the last of September. An individual was seen at Beauvoir, Miss., July 30, 1897, but this was evidently a bird that had gone astray. The bulk of the species pass through the Gulf States in October. The southern boundary of the summer range is finally abandoned about the first of October, and by the last of the month nearly all the birds have crossed the Gulf. Late migrants are recorded as follows: North River, Prince Edward Island, September 13, 1890; St. John, New Brunswick, September 25, 1891; southern Maine, October 2, 1898; Fitchburg, Mass., October 9, 1898; southeastern New York, October 15, 1887; Germantown, Pa., October 18, 1888; Washington, October 20, 1890; Raleigh, N. C., October 16, 1893; Ottawa, October 8, 1887; Chicago, October 12, 1894; Eubank, Ky., October 14, 1891, and New Orleans, October 28, 1899. The earliest recorded date of fall arrival south of the United States is September 14, 1892, in Morelos, Mexico.[a]

668. **Dendroica townsendi** (Towns.). Townsend Warbler.

The Townsend warbler is one of the widest ranging of the western warblers, breeding from the mountains of southern California north to Sitka, Alaska, and the upper Yukon Valley (lat. 61°) and east to Idaho and western Colorado. In migration it ranges to the eastern foothills of Colorado and to western Texas. It nests up to an altitude of 8,000 feet, and in migration has been noted 2,000 feet higher. It winters from Guerrero and the City of Mexico to Guatemala, being most common near the southern limit of the range, while a few sometimes winter as far north as southern California. It has been found in winter in Guatemala at an altitude of 12,000 feet.

Spring migration.—An early migrating Townsend warbler was seen on April 9 in the Huachuca Mountains of Arizona. Migrants from Mexico begin to enter southern California April 14 to 20. The earliest noted in 1888 at Chilliwack, British Columbia, was on May 19, but the usual date of arrival is probably several days earlier, for the average date of the first seen during five years at Columbia Falls, Mont., is May 7, varying from May 4, 1897, to May 11, 1896. First arrivals have been reported from Loveland, Colo., May 11, 1889, and from Great Falls, Mont., May 28, 1890.

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[a] Jouy, Proc. U. S. Nat. Mus., XVI, p. 777, 1894.

Fall migration.—No Townsend warblers were seen at Columbia Falls, Mont., after August 17, 1895, nor at Chilliwack, British Columbia, later than September 12, 1888.

669. Dendroica occidentalis (Towns.). Hermit Warbler.

The hermit warbler breeds from the higher mountains of California to southern British Columbia in the Pacific coast district of the United States. It winters in the pine forests of Mexico and Guatemala at an elevation of 3,500 to 10,000 feet. Early in April it enters the United States, being reported from Oracle, Ariz., April 12, 1899, and the Huachuca Mountains, Arizona, April 9, 1902. Records of the first seen in California are: Campo, April 27, 1877, and Julian, April 25, 1884. A hermit warbler was noted at Burrard Inlet, British Columbia, April 20, 1885. In the fall the species has been noted as late as September 22 in Arizona and October 9 in southern California.

670. Dendroica kirtlandi Baird. Kirtland Warbler.

Breeding range.—The first nests of the Kirtland warbler known to science were taken in Oscoda and Crawford counties, Mich.[a] Several young birds and a single egg were secured July 8 to 14, 1903. The following year a nest with five eggs was taken in Roscommon County, Mich.

Winter range.—The records of the distribution and migration of this, the rarest warbler of the eastern part of the United States, have recently been collected[b] and elaborated. From these data it appears that the Kirtland warbler is a winter resident of the Bahamas as far south at least as the Caicos group. It has been taken in winter on the Berry and Andros groups, and on Eleuthera, New Providence, Green Cay, Watlings, and Athels islands. It has also been taken on the Abaco group, but only in spring and fall migration.

Spring migration.—The southernmost point in the United States at which occurrence of the Kirtland warbler in spring has been noted is West Jupiter, Fla., just northwest from the Andros and New Providence islands, where migrants from these islands would most naturally reach the mainland. Here one was seen April 19, 1897, and another April 27. The next point northward at which the bird has been seen in spring is St. Helena Island, South Carolina, where it was noted on April 27 and May 3. During the first week in May the species is recorded as occurring at St. Louis, Cincinnati, Glen Ellyn, Ill., and Wabash, Ind., and during the next week at Cleveland and Oberlin,

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[a] Adams, Science, XVIII, p. 217, 1903; Wood, Bul. Mich. Orn. Club., V, pp. 3-13, 1904.

[b] Chapman, Auk, XV, p. 289, 1898; XVI, p. 81, 1899.

Ohio, Battle Creek, Ann Arbor, and Mackinac, Mich., and Minneapolis, Minn. In addition to the data given by Chapman there are the following records of the late appearance of the species in spring or of its occurrence in summer: Bahamas,[a] March 4 and April 5, 1897; Little Abaco, Bahamas,[b] March 25, 1902; Nassau, Bahamas,[b] April, 1902; Ann Arbor, Mich.,[c] May 14, 1902; Morgan Park, Ill.,[d] May 22, 1899; Rockford, Ill.,[e] May 25; Lake Koshkonong, Wis.,[e] May 24; Kalamazoo, Mich.,[e] May 15, 1885; Luzerne, Mich.,[e] June 15; Toronto, Canada,[f] May 16, 1900; Oscoda County, Mich., June 15[g] and July 3,[h] 1903.

Fall migration.—The only records of occurrence of the Kirtland warbler in fall in the United States are the following: Fort Myer, Va., September 25, 1887 (Palmer); Chester, S. C., October 11, 1888 (Loomis); and Ohio, opposite Ashland, Ky.,[i] August 28, 1902.

671. **Dendroica vigorsii** (Aud.). Pine Warbler.

Breeding range.—The pine warbler breeds throughout the eastern part of the United States from Florida and the Gulf States northward to New Brunswick, Ontario, and Manitoba. One of the northernmost points from which it is recorded is Carlton, Saskatchewan, where a party of the Biological Survey found it common during July, 1895. The northern boundary of the breeding range of the species is in the Canadian life zone, but comparatively few individuals nest north of the Alleghenian zone. In the region of the plains, where pine forests are lacking, it is a rather rare migrant. It was secured once at Revelstoke, British Columbia. Nearer the Mississippi River and thence to the Atlantic Ocean its presence during the breeding season is largely governed by the extent of pine timber. Hence in summer it is more common in the Southern States and the pitch and white pine districts of southern New England than in the middle hard-wood districts, throughout which, from about latitude 37° northward, it is known to most observers as a more or less common migrant and to a few as a rather rare summer resident.

Winter range.—The pine warbler is a rare winter resident in eastern Texas south to Corpus Christi. From North Carolina and southern Illinois southward it is common in winter in the pines. Occasionally at this season it winters north to Massachusetts. It has not yet been reported from Cuba or the islands at the south of Florida, nor have any specimens been received from the Florida lighthouses. During February, 1902, a pine warbler was taken by one of the parties of the Biological Survey at Matamoras, Tamaulipas. This is probably the first record of its occurrence in Mexico or at any other point outside the United States, except for a casual occurrence in the Bermudas.

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[a] Bangs, Auk, XVII, p. 292, 1900.

[b] Bonhote, Ibis, p. 280, 1903.

[c] Wood, Auk, XIX, p. 291, 1902.

[d] Blackwelder, Auk, XVI, p. 359, 1899.

[e] Adams, Bull. Mich. Orn. Club, V, p. 18, 1904.

[f] Samuel, Auk, XVII, p. 391, 1900.

[g] Frothingham, Bull. Mich. Orn. Club, IV, p. 61, 1903.

[h] Bain, Bull. Mich. Orn. Club, IV, p. 63, 1903.

[i] Jones, Wilson Bulletin, IX, p. 104, 1902.

Spring migration.—The pine warbler is one of the first of the family to migrate in spring. Migrant birds are seen in March over most of the winter range and even to Washington and eastern Pennsylvania. The average date of spring arrival at Boston is April 10, and in southern New Hampshire April 13. In the Mississippi Valley migration seems to be a few days later than east of the Alleghenies. The species reaches St. Louis and central Indiana not much before the middle of April. Grand Rapids, Mich., is reached, on the average, April 17; Chicago, April 21; Ottawa, May 15, and Lanesboro, Minn., April 29.

Fall migration.—Though arriving early in spring, the pine warbler is slow to disappear in fall. It starts south sufficiently early, for it leaves the northern part of its range by the middle of September. But it passes latitude 39° as late as the first half of October, and is scarcely settled in its winter home before the 1st of November. An unusually late migrant was seen at Ottawa October 10, 1891.

This is one of the few warblers of the eastern United States whose winter home is included in its breeding range. During the winter season the pine warbler occupies approximately the southern third of the breeding range; hence it is not surprising that the birds are found to be more common there in winter than at any other time of the year.

672. **Dendroica palmarum** (Gmel.). Palm Warbler.

Breeding range.—This western form of the species breeds north of Manitoba and west of Hudson Bay to at least Fort Churchill, Fort Resolution, and Fort Simpson. While there appear to be no records as yet of its breeding in Manitoba or Minnesota, it has been seen in these localities so late in spring and so early in fall that it will probably be found nesting throughout most of the mountainous districts from northeastern Minnesota northward.

Migration range.—Passing south through the Mississippi Valley the bird is a common migrant on both sides of the Mississippi River. To the west it ranges to eastern Nebraska and eastern Kansas, and it has been noted as accidental in Colorado, Montana, and California. It is less common in Kansas than in Nebraska, for the route mainly traveled turns in the latter State to the east toward Florida. Eastward the species ranges regularly to the Allegheny Mountains, and a few individuals wander each fall to the Atlantic coast, as far north as Washington, D. C., or occasionally to New England.

Winter range.—The palm warbler is abundant in winter in all the Bahamas and in Cuba and Jamaica, and is present, though less common, in Haiti and Porto Rico, which latter island marks the limit of the eastern extension of the species. It also winters in southern Florida. To the south it has been taken on Grand Cayman, Little Cayman,[a] Cayman Brack,[a] the Swan Islands,[b] Cozumel,[c] Ruatan,[d] and Old Providence,[e] but has not as yet been noted on the mainland of Honduras or Nicaragua. Two occurrences on the mainland of Yucatan[f] are recorded, and one of the parties of the Biological Survey found the species not uncommon on Cozumel Island, more common on Mujeres Island, and very common during March and April, 1901, on the mainland of Yucatan, at La Vega.

Spring migration.—It is impossible to separate the records of occurrence of the two forms of this species during spring migration in the Gulf States, with the exception of those made at the lighthouses of southern Florida. Here the earliest individuals of the western form to strike the lights were noted on April 4, 1886, March 23, 1887, March 10 and 11, 1888, and March 3, 11, 23, and 24, 1889. Palm warblers were among the most numerous in the clouds of small birds that swarmed around the lights on the night of March 3, 1889. They were reported on the same night from both Sombrero Key and Fowey Rocks—one of the few instances in which a species has been so reported from the two points. The next certain records of the occurrence of the western form were made at St. Louis, where it was noted April 13, 1883, April 18, 1884, April 13, 1887, and April 17, 1888. These dates correspond closely with those on which the species has been observed in central Indiana—April 17 to 21. Records of average date of arrival farther north are: Chicago, April 25; southern Michigan, May 1; southern Ontario, May 2; southern Wisconsin, April 30; Hillsboro, Iowa, April 22; Lanesboro, Minn., April 30; Elk River, Minn., May 3; Aweme, Manitoba, May 7. A specimen was taken at Fort Chippewyan, Athabasca, May 23, 1901. The fact that the bulk of the western form winter farther south than does *hypochrysea* of the East is reflected by the lateness of spring migration in the Mississippi Valley, as compared with the earliness of the northward movement on the Atlantic coast. By the time *palmarum* has arrived at St. Louis *hypochrysea* has reached New England. The last palm warblers to pass northward in spring have been noted at St. Louis on May 9, 1884, May 12, 1885, and May 10, 1887, and in central Indiana about the middle of May. These dates probably mark the normal passage of the later migrants of this species. In the South the dates on which the species was last seen in spring are quite variable. It was last noted in Florida: Palatka, April 12, 1885; Tarpon Springs, April 18; Gainesville, April 29, 1887; Tortugas, April 26, 1890; Sombrero Key lighthouse, April 25, 1887, and May 15, 1888. Other last dates are: New Providence, Bahamas, April 30; Andros Island, Bahamas, May 2, 1890; Jamaica, April 6; Cozumel Island, Yucatan, April 18, 1901; and Porto Rico, April 8, 1900.

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[a] Cory, Auk, VI, p. 31, 1889.

[b] Ridgway, Proc. U. S. Nat. Mus., X, p. 575, 1888.

[c] Ridgway, Proc. U. S. Nat. Mus., VIII, p. 564, 1885.

[d] Salvin, Ibis, p. 251, 1888.

[e] Cory, Auk, IV, p. 180, 1887.

[f] Boucard, P. Z. S., p. 441, 1883. Stone, Proc. Acad. Nat. Sci., Phila., p. 211, 1890.

Fall migration.—The fall migration of this species and that of its eastern representative *hypochrysea* are especially interesting on account of a unique feature that characterizes them, viz, the general line of migration of one form is at right angles with that of the other, the two intersecting in the vicinity of northern Florida. It is possible that *palmarum* has but one general line of migration, which passes in a southeasterly direction from the central Mississippi Valley to Florida, the Bahamas, and the Greater Antilles, and that the individuals noted in Yucatan and the neighboring islands have crossed from southern Cuba, where this species is one of the commonest of North American birds. The records of the Florida lighthouses do not show such numerous occurrences of *palmarum* as one might expect from the abundance of the bird in Cuba. The earliest dates in fall on which this species struck the lights—September 22, 1885, and September 21, 1886—are quite early as compared with the first dates on which migrants were noted farther north. In northwestern Minnesota the first fall migrants were noted September 9, 1896; at Lanesboro, Minn., September 17, 1888; Keokuk, Iowa, September 11, 1893, and Chicago September 4, 1900. The earliest dates in Indiana range from September 10, 1892, to September 14, 1897. Loomis says that the species is abundant at Chester, S. C., in fall migration, arriving in the second week of September, and Scott records the date of first arrival at Tarpon Springs as September 22. The earliest date in the vicinity of New Orleans is September 25, 1899. These dates indicate a rather rapid migration in fall. The last stragglers of *palmarum* usually leave Manitoba the last week in September; Lanesboro, Minn., the first week in October; Chicago about October 9, and the central Mississippi Valley by the middle of the month; but migrants continue crossing to Cuba for a month longer. The latest dates of striking the lighthouses are November 19, 1886, November 11, 1888, and November 6, 1891.

672a. **Dendroica palmarum hypochrysea** Ridgw. Yellow Palm Warbler.

Breeding range.—Hudson Bay is supposed to be the dividing line between the summer home of the western palm warbler and that of the eastern form *hypochrysea*. The eastern bird breeds from eastern Maine, New Brunswick, and Nova Scotia northward, east of Hudson

Bay. The northern limit of its range is not yet clearly determined, but is probably in Quebec, southern Labrador, and Newfoundland.

Winter range.—From this restricted breeding ground *hypochrysea* comes southwest, following a narrow belt along the Atlantic coast, and winters on the north coast of the Gulf of Mexico. The winter range extends from Louisiana to northern Florida, and occasionally as far north as eastern North Carolina. Accidental visitants have been taken in Cuba and Jamaica. In central Alabama *palmarum* appears as a fall migrant and passes on to the southeast, its place being taken by *hypochrysea* as a common winter resident. Early in the spring *hypochrysea* leaves for the northeast, and later *palmarum* passes through toward the Mississippi Valley. Chapman found a few specimens of *hypochrysea* as far south as Gainesville, Fla., and noted the departure of the last northward migrant March 15, 1887, six weeks before *palmarum* finally disappeared.

Spring migration.—Migrants appear on the average at Washington April 6; Philadelphia, April 14; central Connecticut, April 15; Boston, April 18; St. John, New Brunswick, April 20; Halifax, Nova Scotia, April 27, and Pictou, Nova Scotia, May 1, showing that *hypochrysea* is one of the earliest of migrating warblers and that it endures severe weather with impunity. At Raleigh, N. C., the bird is a rare winter visitant. The last to leave for the North was noted April 20, 1885, April 16, 1889, April 14, 1890, and May 1, 1893. The latest spring migrant noted at Washington passed through on April 29. Hence it may be assumed that palm warblers that were reported as departing from Asheville, N. C., on May 12, 1890, and May 15, 1894, were of the form *palmarum*, which has been taken at Washington as late as May 18.

Fall migration.—Yellow palm warblers are expected to reappear in southern Maine soon after the middle of September, and to pass on to New Jersey and Washington about the 1st of October. An unusually early fall migrant was seen at Beaver, Pa., September 7, 1889. In 1887 the species was not noted at North River, Prince Edward Island, after September 15, but at St. John, New Brunswick, the average date of the last recorded is about October 13. New England and the districts north of the winter home are occupied until about October 20, and the bird is sometimes seen in Massachusetts as late as early November. A specimen was taken near New York City November 15, 1898.

673. **Dendroica discolor** (Vieill.). Prairie Warbler.

Breeding range.—The prairie warbler is quite local in its distribution. Along the Atlantic coast it breeds from the northern Bahamas and Florida to Massachusetts, but north of Philadelphia is found, as a rule, only near the coast. Farther south it is common locally from sea level to about an altitude of a thousand feet. The highest point at which it has been recorded is Old Fort in western North Carolina at about fifteen hundred feet. From northwestern Georgia, through Tennessee, Kentucky, Ohio, and western Pennsylvania, it ranges up to a thousand feet elevation. Throughout most of the Mississippi Valley the prairie warbler is rare. This is especially noticeable in Illinois and Indiana, where so many other warblers are common. It breeds locally but not uncommonly in southern and central Michigan and southern Ontario—rarely or accidentally in southeastern Wisconsin—and westward in southern Iowa, eastern Nebraska, and eastern Kansas. In the three States last mentioned its breeding range has been traced up to just a thousand feet elevation. In Nebraska it has been noted, in migration, as high as 1,300 feet at Westpoint. In southwestern Missouri it breeds at Pierce City (1,300 feet), which is the farthest point to the southwest at which it occurs regularly. The species is not uncommon locally in northern Mississippi, and was once reported from the coast at Beauvoir; it has also been recorded once from Louisiana and once from Texas.

The prairie warbler is principally a bird of the Carolinian zone, though a few breed in the Alleghenian of central Michigan and western Pennsylvania. In parts of Connecticut and Rhode Island it is common locally, as it is also in eastern Massachusetts, where it is characteristic of the barberry districts. In the Austroriparian zone of the South Atlantic and Gulf States a few of the species breed. The bird is, however, rare in the Gulf strip of the Austroriparian zone.

Winter range.—The western boundary of regular westward distribution of the prairie warbler runs southeast from eastern Kansas through central Alabama to Florida. The winter home of the species includes all the Bahamas and the Greater Antilles. Few birds have a wider distribution in the West Indies. The species is recorded in all the larger and in 26 of the smaller islands. In the Lesser Antilles it ranges to St. Eustatius[a] and St. Christopher,[b] where it was found in the spring and fall of 1890. To the south of Cuba it has been taken on Little Cayman[c] and Cayman Brack;[c] on the Swan Islands half way to Yucatan; on Mujeres[d] and Cozumel Islands[e] off the coast of Yucatan, and on the island of Bonacca[d] near the north coast of Honduras (the southernmost point from which it is reported). The northern limit of the winter range is about the center of Florida, a little farther north than the bird reaches in the Bahamas.

Spring migration.—The records of spring migration of the prairie warbler in Florida are indefinite, owing to the fact that the bird winters in the southern part of the State. Some unusually early records of migrants to the northward are March 5, 1888, March 12, 1889, and February 19, 1891, at Frogmore, S. C. The full tide of migration, however, does not start until the last of March. Though there are records of single birds striking as early as March 7 at Sombrero Key lighthouse; no large flights occur until the last week in the month. During the first week in April the species crosses northern Florida and Georgia, arriving the following week in central North Carolina. The average date of earliest arrivals for sixteen years at Raleigh, N. C., is April 15, with extremes of April 6, 1892, and April 22, 1886. In the northwestern extremity of Georgia, at Rising Fawn, the bird was seen April 5, 1885. At Eubank, Ky., on the other side of the mountains, the seven years' average of earliest arrival is April 20, with extremes of April 13, 1893, and April 22, 1889. The earliest migrants usually arrive at Washington April 22; in southeastern New York May 4; at Portland, Conn., May 6, and at Boston May 8. One was taken at Toronto, May 11, 1900, probably the first record of the species for Canada. Thus the northern part of the breeding range is reached by the first week in May, at which time and for a week longer migrants are still crossing from Cuba to Florida. According to the records, Haiti is finally abandoned April 1, Jamaica April 11, and the southern Bahamas April 12. Some late migrants struck the Cay Lobos lighthouse, off the north coast of Cuba, May 3, 1900, and May 13, 1901.

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[a] Cory, Auk, VIII, p. 47, 1891.

[b] Cory, Auk, VIII, p. 48, 1891.

[c] Cory, Auk, VI, p. 31, 1889.

[d] Salvin, Ibis, p. 250, 1888.

[e] Ridgway, Proc. U. S. Nat. Mus. VIII, p. 564, 1885.

Fall migration.—The time when the prairie warbler begins its southward journey can be judged from the fact that migrants have been noted by August 18 at New Providence, Bahamas, and on the island of Jamaica. Throughout the Bahamas and in Cuba this species is one of the most abundant winter birds; hence it must be a common migrant through Florida. But no such numbers of the species are killed by striking the lighthouses as of several other species apparently no more common. The prairie warbler is recorded as striking on sixty-one different nights, more than two-thirds of which were in the fall. At Sombrero Key, where an exact count was kept of the number of each species striking and killed, just half of the fall records of this species are of but 1 bird per night. Six in a night was the largest number attained, except on October 2, 3, and 4, 1888, when the light was struck by 20, 47, and 7 birds respectively. The keeper at the Alligator Reef light reports that 15 prairie warblers struck his light on September 28, 1889.

The prairie warbler leaves its northern breeding grounds early in September, and few of the birds are seen along the central Atlantic coast later than this date. The five years' record of the latest date on which fall migrants were seen at Raleigh, N. C., gives an average of September 6, with extremes of September 3 and 9. At Frogmore, S. C., the reported dates of the end of fall migration are September

25, 1885, September 30, 1886, and September 20, 1887. The earliest recorded dates on which the Sombrero Key lighthouse was struck by southward migrants are August 22 and 23, 1889; but the bulk of the birds pass by after September 16, and the larger flights occur during the ten days from September 29 to October 9. The regular migration may be considered closed by the middle of October, the only dates later than this on which migrants were observed being November 4, 1888, at Sombrero Key, and November 6, 1891, at Fowey Rocks. Since the regular spring migration begins about the 1st of March, the prairie warbler spends at least five months in its winter home, and many individuals remain a month longer.

674. Seiurus aurocapillus (Linn.). Oven-bird.

Breeding range.—The oven-bird breeds from Kansas and Virginia north to Alaska, Hudson Bay, the Gulf of St. Lawrence, and Newfoundland, and south in the Alleghenies to South Carolina. It ranges west to Colorado and Montana, and accidentally to British Columbia. A few of the species breed in the northern Bahamas.

Winter range.—The winter range of the oven-bird covers a wide range of longitude, from the Pacific coast of Mexico at Mazatlan to Colombia, South America. It is strange that the species should occur at Mazatlan, as it is a bird of the eastern United States, with but scattering records west of Kansas. It is seldom that a Mississippi Valley bird goes into western Mexico, for the general direction of migration is south and southeast. United States birds that winter in western Mexico usually come from California and the Pacific coast region. But the oven-bird, which was originally reported by Grayson[a] as occurring from November to April at Mazatlan, was found in March and April, 1899, in that vicinity by one of the parties of the Biological Survey.

In eastern Mexico the oven-bird winters from Monterey, Nuevo Leon, to eastern Oaxaca, being rare in both these places, but common along the coast of Tabasco and abundant in Yucatan. It has been reported in Mexico at as high elevation as 4,000 feet, but, with the exception of a few noted at Monterey, all the individuals seen by the parties of the Biological Survey were at less than a thousand feet altitude. The species is common in the lower parts of Guatemala and ranges in smaller numbers to nearly 5,000 feet. It has been taken in Honduras at Omoa and on the islands of Ruatan[b] and Bonacca,[b] on the north coast. In Nicaragua a few individuals have been seen at Lake Nicaragua,[c] on the southeastern coast,[d] and at Greytown.[e] In Costa

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[a] Lawrence, Mem. Bos. Soc. Nat. Hist. II, p. 269, 1874.

[b] Salvin, Ibis, p. 251, 1888.

[c] Nutting, Proc. U. S. Nat. Mus., VI, p. 381, 1883.

[d] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893.

[e] Lawrence, Am. Lyc. Nat. Hist., VIII, p. 179, 1865.

Rica it has been noted several times, but in only one instance has it been reported as common—at Miravalles,[a] on the northwest coast, at 1,400–2,000 feet. At San José[b] (3,500 feet) it is quite rare. The southernmost points at which its occurrence is recorded are the volcano of Chiriqui[c] in Panama, and Bonda[d] on the coast of northern Colombia.

The range of the oven-bird in the West Indies is extensive; it includes the larger islands and extends to St. Croix and St. Thomas of the Lesser Antilles. The bird is found throughout the Bahamas; there are records of its occurrence on twelve different islands, and it winters in quite large numbers at least as far north as Andros and New Providence. It is abundant in winter in southern Florida and is less common thence to the central part of the State. On January 21, 1903, an individual was seen at Whitfield in northern Florida. A few of the species sometimes spend the winter on the islands off the coast of Louisiana.[e]

Spring migration.—In the records of the occurrence of the oven-bird in spring in Florida migrants and wintering birds are indistinguishably confused, excepting, of course, in the case of those received from the light-houses.

At Raleigh, N. C., the Brimley brothers spent a great deal of time and care in obtaining exact records of arrival and departure of birds. Their records for the different years are, so far as most species are concerned, surprisingly uniform, varying in a long series of years only three or four days from the average. In the case of the arrival in spring of the oven-bird, however, there are not only variations from year to year, but quite large differences in the averages of five-year periods. These five-year averages are as follows: 1885–1889 average, April 18; 1890–1894 average, April 12; 1896–1900 average, April 22. The extremes are April 7, 1892, and April 29, 1899. It is probable that variations in the winters, which drive the birds south or allow them to remain even as far north as St. Augustine, may account for this irregularity. The average date of arrival at Raleigh is probably April 12–15, while at Asheville, N. C., in the mountains, it is April 18.

The oven-bird, called in southern Florida and the Bahamas the "night-walker," is one of the birds which strike most commonly against the Florida lighthouses. The records of its striking are voluminous, but can not be used with perfect confidence because of the uncertainty whether the species has been in all cases clearly distinguished from other members of the genus. The earliest unquestionable date of striking is April 6, 1887, at Sombrero Key. The earliest date on which spring migrants were noted on the mainland is March 26, 1885, at Pensacola. Records of average date of arrival north of Raleigh are: Variety Mills, Va., White Sulphur Springs and Frenchcreek, W. Va., and Washington, D. C., April 24–26; Beaver, Pa., April 28; Berwyn, Pa., May 1; southeastern New York, May 2; central New York, May 4; northeastern New York, May 8; central Connecticut, May 3; Boston, May 5; St. Johnsbury, Vt., May 9; southern New Hampshire, May 7; southern Maine, May 10; Montreal, May 13; southern New Brunswick, May 20; central Nova Scotia, May 23. In 1887 the oven-bird was noted at North River, Prince Edward Island, May 19, and at Godbout, Quebec, June 2.

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[a] Underwood, Ibis, p. 434, 1896.

[b] Cherrie, Auk, IX, p. 21, 1892.

[c] Salvin, P. Z. S., p. 183, 1870; Bangs, Auk, XVIII, p. 368, 1901; Bangs, Proc. N. E. Zool. Club, III, p. 62, 1902.

[d] Specimen in Carnegie Museum, Pittsburg, Pa.

[e] Beyer, The Avifauna of Louisiana, p. 40, 1900.

Spring migration of oven-birds in the Mississippi Valley is decidedly earlier than in the same latitudes farther east. The average date of earliest arrivals for ten years at Eubank, Ky., is April 10, with extremes of April 3, 1888, and April 17, 1895. The average for four years at St. Louis is April 14. No records of first arrival at New Orleans correspond to these dates made farther to the north. The earliest dates at New Orleans are April 2, 1881, April 6, 1895, and April 7, 1900. The first of the species appear at Brookville, Ind., April 23; Waterloo, Ind., April 27; Petersburg, Mich., April 27; southern Ontario, May 4; Parry Sound district, Ontario, May 12; Ottawa, May 16; Chicago and southern Wisconsin, May 1; Keokuk, Iowa, April 29; Lanesboro, Minn., May 6; Elk River, Minn., May 7; Medicine Hat, Assiniboia, May 17, 1894; Edmonton, Alberta, May 14, 1897; Aweme, Manitoba, May 14. Far to the northwest the first oven-bird was seen at Little Cascade Rapid, Athabasca, May 26, 1903; Athabasca Lake May 29, 1901; and at Nulato, Alaska, May 30, 1867. The rarity of the oven-bird in Texas proves conclusively that the numbers which make the species fairly common in eastern Kansas and Nebraska do not pass through the State. Indeed, it is so decidedly a bird of woods and forest that it seems to find few suitable places in the whole country between Alta Mira, Tamaulipas, and the Sabine River. The earliest record of spring arrival in Texas is April 7, 1890 (San Antonio), a date when the Mississippi Valley birds have already arrived at the mouth of the Ohio. The following records show approximately when the last of the species leave their winter home: St. Croix, in April; Costa Rica, April 16, 1864; Jamaica, April 20; Haiti, April 19, 1895; Cozumel, April 18, 1901; Mazatlan, April 12, 1899; Cuba, end of April; and Andros Island, first week in May. The latest recorded dates of striking at Cay Lobos lighthouse off the north coast of Cuba are May 17, 1900, and May 13, 1901; and the latest at Sombrero Key light, Florida, May 19, 1887, May 15, 1888, and May 29, 1889.

Fall migration.—Early in August migrating oven-birds are seen just south of their breeding range. The earliest recorded date of a fall migrant at Raleigh, N. C., is August 9, 1892; in Chester County,

S. C., August 7; at Key West, Fla., August 19, 1889; at Rockport, Tex., August 13, 1892; in Cuba and Porto Rico, the end of August, and at San José, Costa Rica, August. The bulk of the species move over this route about a month later and the birds are at times very numerous. From the middle of September to the middle of October great numbers strike the Florida lighthouses. The keeper of the lighthouse at Fowey Rocks writes: "On the nights of October 10 and 11, 1891, I could have filled a mail bag with oven-birds and a few other birds."

Some records of final departure are: Aweme, Manitoba, September 23, 1899; Ottawa, September 29, 1900; North River, Prince Edward Island, September 2, 1888; St. John, New Brunswick, September 29, 1891; Chicago, September 30, 1898; Waterloo, Ind., October 7, 1887; Englewood, N. J., October 7, 1886; Philadelphia, October 9, 1887; Washington, October 17, 1890; St. Louis, September 29, 1885; Eubank, Ky., October 27, 1886; Raleigh, N. C., October 23, 1885; Asheville, N. C., October 5, 1891; Chester County, S. C., October 29; Ariel, Miss., October 19, 1897, and Sombrero Key lighthouse, November 11, 1888.

675. **Seiurus noveboracensis** (Gmel.) Water-Thrush.

Breeding range.—The notes on the migrations of the two forms of the water-thrush (*Seiurus noveboracensis* and *S. n. notabilis*) are so mixed that it is impossible to say to which bird a great many of them refer. While the two birds are separated during the breeding season, their winter ranges overlap. In general it can be said that in summer the eastern form (*noveboracensis*) occupies the district east of the Mississippi River, breeding from northern Illinois, northern New England, and the mountains of Pennsylvania and West Virginia to Hudson Bay, Labrador, and Newfoundland.

Winter range.—Both forms of the water-thrush pass southward in winter to South America; hence, except when specimens are taken, it can not be told which of the two forms is actually observed. In the West Indies the eastern water-thrush is one of the widest-ranging species. It is abundant in winter at least as far north as New Providence[a] and the larger islands and southeast to St. Croix and St. Thomas. It is less common to the southeast where it has been taken at Antigua, Guadeloupe,[b] Dominica, Grenada,[c] St. Lucia,[d] Barbados,[e] Carriacou,[f] Tobago,[g] and Trinidad.[h] These last-mentioned islands complete the course from the United States through the Bahamas and the Leeward and Windward Islands to South America, and make it possible for the water-thrushes that winter in British Guiana to reach their destination either eastward along the coast of the mainland or southward by way of the islands.

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[a] Bonhote, Ibis, p. 510, 1899.

[b] Cory, Auk, VIII, p. 49, 1891.

[c] Wells, Proc. U. S. Nat. Mus., IX, p. 611, 1886.

[d] Allen, B. N. O. C., VI, p. 128, 1881.

[e] Feilden, Ibis, p. 482, 1889.

[f] Wells, Auk, XIX, p. 348, 1902.

[g] Salvin, Cat. Strick. Coll., p. 87, 1882.

[h] Chapman, Bul. Am. Mus. Nat. Hist., VI, p. 24, 1894.

The West Indian records of the water-thrush unquestionably relate to the eastern bird, but on the mainland from Mexico to South America the two forms occur together in winter. Hence it is not certain that all of the following records relate to the eastern bird to which they are ascribed. This form appears to have been taken in winter by the parties of the Biological Survey near the City of Mexico and in spring in Vera Cruz, and also in spring by Chapman at Las Vigas (8,000 feet), in Vera Cruz. During the spring of 1902 the species was seen from April 20 to May 3 in northern Coahuila. It is common in Yucatan along the east coast and the neighboring islands, but most of the records are made during the spring, when the water-thrush is a very common migrant in the State. It occurs throughout Guatemala to an elevation of nearly 6,000 feet; on both coasts of Nicaragua; on both coasts of Costa Rica, and also in the interior to at least 4,000 feet, though not common at this altitude, and on both coasts and in the lower mountains of Panama. Judging from the records, the bird is common in the northern half of Colombia,[a] being taken in fall migration on the northern coast and during the winter in the interior as far south as Minca,[b] Medellin,[c] and Bucaramanga.[d] It seems to be most common from 2,000 to 6,000 feet. Its range extends still farther east in northern South America to Venezuela[e] and British Guiana, where it has been taken on the coast at Caracas[f] and Bartica Grove,[g] and in the interior on Mount Roraima.[h] It is abundant in the valleys of the Orinoco and Caura rivers,[i] as attested by many specimens taken between October 21 and March 24.

Spring migration.—The results of the few attempts made to separate the migration records of the two forms of the water-thrush in the United States would seem to indicate that the western form migrates in spring earlier than the eastern, and that birds which sometimes winter in Florida as far north as St. Augustine are from the West.

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[a] Bangs, Proc. Biol. Soc. Wash., XIII, p. 105, 1899; Allen, Bul. Am. Mus. Nat. Hist., XIII, p. 177, 1900; Auk, XVII, p. 366, 1900; Cassin, Proc. Acad. Nat. Sci. Phil., XII, 191, 1860.

[b] Salvin and Godman, Ibis, p. 117, 1880.

[c] Sclater and Salvin, P. Z. S., p. 493, 1879; Sharpe, Cat. Birds Brit. Mus., X, pp. 346, 653, 1885.

[d] Berlepsch, J. f. Orn., p. 282, 1884; Wyatt, Ibis, 322, 1871.

[e] Sclater and Salvin, P. Z. S., p. 251, 1869; p. 627, 1868; Cabanis, Mus. Hein., I, p. 16, 1850.

[f] Cabanis, Schomb. Guiana, III, p. 666, 1848.

[g] Quelch, Timehri, p. 262, 1896.

[h] Salvin, Ibis, p. 202, 1885.

[i] Berlepsch and Hartert, Novit. Zool., IX, p. 10, 1902.

Usually but few eastern water-thrushes remain in winter in any part of the United States. Moreover, their dates of migration are so late as to indicate a journey from a far southern land. In addition to the difficulty of separating the eastern and western forms, there is the added trouble that a large number of southern observers do not discriminate with certainty between these forms and *S. motacilla*. As a result there is a small residuum of available notes. There is no series of unquestionable records south of Raleigh, N. C., where the average date of arrival for six years is April 25, with extremes of April 20, 1889, and April 29, 1891. From this we may infer that the birds reach the latitude of southern Florida by the first week in April. The Raleigh birds are certainly the eastern form, and those observed at St. Louis as surely the western; yet the five years' average of the dates of first appearance at St. Louis is April 27. This indicates that althoughthe western form is in advance, the difference is so slight that from a mixed lot of data it would not be safe to assign early dates to the western form and late to the eastern. To the northward average records of arrival are: Washington, April 30; Philadelphia, May 6; central Connecticut, May 4; Boston, May 8; southern Maine, May 10; central New Brunswick, May 14. West of the Alleghenies, Waterloo, Ind., is reached April 26; Listowel, Ontario, April 28; the Parry Sound district of Ontario, May 5, and Ottawa, Ontario, May 12.

Although the southern breeding range of the water-thrush is in the Canadian life zone, some individuals are very late in leaving their winter quarters. The species has been taken at Minca, Colombia, March 17, 1879; Concepcion, Colombia, March 17, 1899; San José, Costa Rica, May 21, 1889; southeastern Nicaragua, May 5, 1892; Yucatan, April 22, 1901; San Andres Tuxtla, Vera Cruz (1,500 to 3,000 feet), May 11–13, 1894; Las Vigas, Vera Cruz (8,000 feet), April 26, 1897; Cay Lobos lighthouse, May 2 and 17, 1900; Cay Sal, Bahamas, May 14–19, 1891; Tortugas, May 2, 1890; Raleigh, N. C., May 28, 1887, May 23, 1891.

This species and *S. motacilla* have struck the Florida lighthouses on many nights, sometimes in enormous numbers, but they can not be distinguished in the records.

Fall migration.—The water-thrush is the earliest fall migrant of the warblers whose southern breeding range is in the Canadian life zone, and which do not breed in the southern Allegheny Mountains. It has been noted as early as July 15 at Worcester, Mass., and by the last of the month at Ossining, N. Y., and Washington, D. C.; also in late July and early August at Raleigh, N. C. The first to strike Fire Island light, Long Island, in 1892 was noted August 14. Early fall migrants arrived at Raleigh August 17, 1885, August 17, 1887, August 2, 1888, July 29, 1892, August 7, 1894, August 5, 1898, and August

8, 1899. At Key West, Fla., the first southbound migrant of the year was noted August 16, 1889. One was taken on August 28, 1858, in Jamaica, where Gosse says the earliest fall migrants arrive at the end of August, immediately after which the species becomes abundant. Some early records of fall occurrence are: Mona Island[a] east of Porto Rico, August 18, 1901; southeastern Nicaragua, September 20, 1892; San José, Costa Rica, September 14, 1889; Escazu,[b] Costa Rica, August 13, 1902; Bonda, Colombia, September 8, 1898; Caracas, Venezuela, October 20. Here appears to be strong evidence that these earliest arrivals follow comparatively straight lines of migration from the United States. The birds found at Bonda, for instance, probably did not come from the west by way of Central America and Yucatan, but took a straight flight from some of the West Indies to the coast of South America.

The following records show how late in the fall some water-thrushes linger: Durham, N. H., September 26, 1899; Portland, Conn., October 3, 1894; Ossining, N. Y., October 3; Renovo, Pa., October 5, 1902; Germantown, Pa., October 17, 1885; Raleigh, N. C., October 1, 1887 and 1891.

675a. Seiurus noveboracensis notabilis (Ridgw.). Grinnell Water-Thrush.

This name is given in general to the water-thrushes of western North America that breed from Minnesota and Nebraska to Alaska, but the subspecies is not strictly confined to this region. In migration it passes to the Atlantic coast, sometimes, though rarely, as far north as Washington, D. C., and New Jersey. It is more common southward, until in South Carolina both forms are commonly found. Among the few certain records of the occurrence of the subspecies south of the United States are those made at Tapana, Oaxaca, April, 1869; Ceiba,[c] January, and Yaruca,[c] February, 1902, both in Honduras; on both coasts of Nicaragua, and at Chirua,[d] Colombia, at 7,000 feet.

Spring migration.—It is probable that the following records of average date of spring arrival of the water-thrush refer chiefly to the western form: St. Louis, April 27; Chicago, May 2; Keokuk, Iowa, May 3; Lanesboro, Minn., May 5; Minneapolis, Minn., May 6; northwestern Minnesota, May 9; Aweme, Manitoba, May 15. The early migrants travel so fast that by May 16, 1901, they were noted near Lake Athabasca, and they arrived at Fort Simpson, Mackenzie, May 22, 1860, May 20, 1861, and May 14, 1904. Migration in the Rocky Mountains is much later. The birds scarcely reach northern Colorado before the second week in May, and the average date of arrival during five years at Columbia Falls, Mont., is May 20, the earliest being May 18, 1895. The first migrants were noted at Red Deer, Alberta, May 27, 1892, and May 29, 1893, and at Edmonton, Alberta, May 15, 1897.

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[a] Bowdish, Auk, XX, p. 19, 1903.

[b] Specimen in the Carnegie Museum, Pittsburg, Pa.

[c] Bangs, Bul. Mus. Comp. Zool., XXXIX, p. 153, 1903.

[d] Bangs, Proc. Biol. Soc. Wash., XIII, p. 105, 1899.

676. **Seiurus motacilla** (Vieill.). Louisiana Water-Thrush.

Breeding range.—The Louisiana water-thrush breeds throughout its range in the United States, and is one of the characteristic species of the Carolinian life zone, in which it nests just to the northern limit in southern New England, southern Ontario, southern Michigan, and southern Minnesota. Thus the breeding ranges of *S. noveboracensis* and *S. motacilla* are largely separated by the Alleghenian life zone.

Winter range.—The winter range of this species is much the same as that of the last, except that it extends somewhat more to the west. The bird exhibits the rather rare habit of a migration from the Mississippi Valley to the western coast of Mexico—that is, a distinctly southwestern migration through Mexico. Ranging only to eastern Nebraska, eastern Kansas, and quite sparingly to eastern Texas, it yet was found by the parties of the Biological Survey in Durango and Guerrero, and it has been reported as not rare at Mazatlan and Colima. A few individuals winter from the coast to an altitude of 3,500 feet as far north as Chacala, Durango, and Monterey, Nuevo Leon.

The Louisiana water-thrush is found in winter throughout Guatemala from the Pacific coast to 5,000 feet and in migration a thousand feet higher. It is rare or wanting in Campeche and Yucatan, and probably occurs there only in migration. The ranges of the two water-thrushes in Honduras, Nicaragua, Costa Rica, and Panama are much the same, but *motacilla* is much less common than *noveboracensis*. The known range of *motacilla* was extended to the mainland of South America by the taking of a specimen during the winter of 1897–98 on the coast of Santa Marta, Colombia,[a] and another, on November 8, 1898, in the same vicinity at Bonda.[b]

The species is not common in the West Indies, and is somewhat restricted in its range as compared with the rest of the genus. It occurs in Cuba, Haiti, Porto Rico, Jamaica, Grand Cayman, Old Providence, the northern Bahamas, New Providence, Berry, and Bimini Islands. It is recorded from Antigua of the Lesser Antilles, but not from any of the neighboring islands.

Spring migration.—Migration records of the Louisiana water-thrush are practically wanting for Florida and the Gulf coast. There is, however, a most excellent set of records from North Carolina, which show very uniform times of arrival without regard to altitude. The following table gives dates of earliest arrival in spring at Raleigh,

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[a] Bangs, Proc. Biol. Soc. Wash., XII, p. 143, 1898.

[b] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 177, 1900; Auk, XVII, p. 366, 1900.

Statesville, and Asheville, and with them similar records from Eubank, Ky., just across the mountains (to the northwest) from Asheville:

Record of spring arrivals of Louisiana water-thrush.

Year.	Raleigh.	Statesville.	Asheville.	Eubank, Ky.
1885	Apr. 4	Mar. 27		
1886	Mar. 27			Mar. 28
1887	Mar. 26	Mar. 28		Mar. 27
1888	Mar. 28	Mar. 24		Mar. 24
1889	Mar. 26			Mar. 24
1890	Mar. 29		Apr. 4	Mar. 25
1891			Mar. 25	Mar. 27
1892	Apr. 1		Mar. 26	Mar. 25
1893	Apr. 3		Mar. 30	Mar. 29
1894			Mar. 25	Mar. 30
Average	Mar. 30	Mar. 26	Mar. 28	Mar. 27

The following dates of earliest arrival in spring are more or less in agreement with the foregoing: Gainesville, Fla., March 8, 1887; Greensboro, Ala., April 5, 1888; Shelby, Ala., April 4, 1898; Rising Fawn, Ga., March 28, 1885; New Orleans, April 2, 1898. Northern records of average date of arrival are: Frenchcreek, W. Va., April 3; Washington, April 11; Beaver, Pa., April 14; Scarboro, N. Y., April 19; Portland, Conn., April 17. Migration up the Mississippi River and westward is not much different from that in corresponding eastern latitudes. At St. Louis the average date of arrival is April 8; at Brookville, Ind., April 16; Petersburg, Mich., April 17, and Lanesboro, Minn., April 22. The dates of first arrival at Manhattan, Kans., are April 18, 1884, and April 15, 1885; at Onaga, Kans., April 12, 1891; April 15, 1892, and April 16, 1893. In Texas the species arrived at the Rio Grande on March 31, 1877; in Refugio County, March 17, 1899; at Corpus Christi, March 17, 1899; at San Antonio, March 25, 1880, and April 9, 1889; and at Gainesville, March 24, 1885, and March 24, 1886.

Fall migration.—The two water-thrushes start south at about the same time, but while *noveboracensis* occupies nearly three months in making its fall migration, the journey of most of *motacilla* is rapid, the latest migrants following closely after the first to leave. Southern New England and southern Minnesota are usually finally abandoned in August. The six years' average of dates of last seen at Renovo, Pa., is September 8, and the latest date September 17, 1894. The fact that no water-thrushes are reported after August from Eubank, Raleigh, or Asheville shows how largely the great body of the birds leave their breeding grounds in the early fall. A belated migrant was seen at Englewood, N. J., October 2, 1885.

South of the United States the birds reached Jalapa, Mexico, in August, 1884; Volcan de Fuego, Guatemala (6,000 feet), in August; Bonacca Island, Honduras, in September, and Jamaica on September 5, 1859.

677. Geothlypis formosa (Wils.). Kentucky Warbler.

Breeding range.—The Kentucky warbler is a forest lover and makes its chief home in the heaviest timbered regions and dark damp woods of the central Mississippi Valley. Eastward it breeds more or less locally from the lower Hudson River Valley to North Carolina. There is a single record of its breeding in South Carolina, and four records of its occurrence during migration in Florida. The Kentucky warbler is common in the State from which it takes its name and in the watershed of the Ohio River and its tributaries. It is uncommon north of this region, but is found as far as Lake Erie, southern Michigan, southern Wisconsin, and southwestern Minnesota. It is accidental in Ontario and Quebec. The western limit of its range is reached in southeastern Nebraska, and thence through eastern Kansas and Indian Territory to eastern Texas. Though not uncommon in favorable localities along the streams in these States, it is not nearly so abundant as in the Ohio Valley. Breeding principally below an elevation of 1,000 feet, it is still not confined to the lowlands. In western North Carolina, in the mountains, it breeds commonly around Asheville at 2,000 feet altitude, and has been noted up to 3,500 feet. The extreme southwestern part of its breeding range is found in the vicinity of San Antonio, Tex. As a migrant the bird has been noted at Corpus Christi, Tex.[a]

Winter range.—The Kentucky warbler is rather common in most of Guatemala, from the hot regions on the Pacific coast to the mountains, and occurs up to at least 7,000 feet altitude. It is known to be a common winter resident of southeastern Nicaragua,[b] and is quite generally distributed over Costa Rica[c] and Panama, both on the coasts and in the uplands to 3,500 feet. The only records of its occurrence south and east of Panama are those of some specimens taken at Bonda,[d] and Santa Marta,[e] Colombia.

Until within recent years our only knowledge of the occurrence of the Kentucky warbler in Mexico was confined to records of its capture at Playa Vicente and Guichicovi. Through the explorations of some of the parties of the Biological Survey, it is now known to be a winter resident of southern Mexico, in the States of Tabasco and Campeche and southward to the Pacific coast.

Spring migration.—The records of occurrence of the Kentucky warbler in spring in Florida are: Tarpon Springs, April 6, 1886; near mouth of the Suwanee River, April 21, 1892; Dry Tortugas, March 29, 1890, and Sombrero Key (where a bird struck the light), April 25,

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[a] Chapman, Bull. Am. Mus. Nat. Hist., III, p. 318, 1891.

[b] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893.

[c] Underwood, Ibis, p. 434, 1896. Cherrie, Auk, IX, p. 21, 1892.

[d] Allen, Bul. Am. Mus. Nat. Hist. XIII, 177, 1900; Auk, XVII, 366, 1900.

[e] Bangs, Proc. Biol. Soc. Wash., XII, p. 144, 1898.

1887. The earliest migrant of the year was seen at Savannah, Ga., April 8, 1894; near Atlanta, Ga., April 9, 1893, April 8, 1894, April 6, 1895, April 1, 1896, April 8, 1898, and April 10, 1900—average, April 7; at Rising Fawn, in the northwestern corner of Georgia, April 16, 1885, and in the mountains near Asheville, N. C., April 24, 1892, April 22, 1893, and April 18, 1894. The seven years' average of quite irregular records of earliest arrival at Raleigh, N. C., is May 1. More regular dates indicate first arrival at Beaver, Pa., May 1; Berwyn, Pa., May 7; Brookville, Ind., May 6, and Keokuk, Iowa, May 7. The Alabama records are: Greensboro, April 5, 1888; Coosada, April 9, 1878; and Shelby, April 18, 1898. The records for New Orleans are April 2, 1881, April 1, 1894, March 30, 1895, and March 31, 1899. Texas dates are considerably later than those along the Mississippi. From the vicinity of San Antonio, Tex., there are records for five years, varying from April 8, 1890, to April 18, 1901—average, April 14. A date almost identical—April 15—is the average of seven years' records from the extreme northern part of Texas. This is only one of several cases in which the records of spring arrival for northern Texas are fully as early as for the southern part of the State. Taken in connection with the early dates of arrival on the Louisiana coast, these dates seem to indicate that the individuals breeding along the rivers of northern Texas reach their breeding grounds in a northwesterly direction from the northern part of the Texas coast.

The following table gives a good idea of the usual time of arrival of the Kentucky warbler in the central Mississippi Valley:

Spring arrival of the Kentucky warbler.

Year.	Helena, Ark.	Eubank, Ky.	St. Louis, Mo.	Onaga, Kans.
1884			Apr. 28	
1885			Apr. 21	
1886		Apr. 15	Apr. 21	
1887		Apr. 20	Apr. 27	
1888				
1889		Apr. 19		
1890		Apr. 24		
1891		Apr. 18		
1892		Apr. 22		May 13
1893		Apr. 15		May 14
1894	Apr. 27	Apr. 27		May 5
1895	Apr. 21	Apr. 27		May 3
1896	Apr. 15			Apr. 26
1897	Apr. 16			May 6
1898	Apr. 17			May 8
1899	Apr. 24			
1900	Apr. 19			Apr. 29
1901	Apr. 21			May 5
Average	Apr. 20	Apr. 21	Apr. 24	May 5

Fall migration.—Fall records of migration of the Kentucky warbler are not numerous. The southward movement begins the last of July, and by the first of September most of the birds have left their breeding grounds. The date of passage of the last-observed migrant of the year at Berwyn, Pa., is September 4, 1896, and at Raleigh, N. C., September 12, 1894. The latest dates at Eubank, Ky., are September 2, 1887, and September 6, 1888, and the latest at Bonham, Tex., August 20, 1885. The species usually leaves New Orleans by the middle of September, though a very late migrant was noted October 19, 1895.

South of Mexico there are no records of fall migrants except October 7, 1890, San José, Costa Rica, and October 7 and 8, 1897, and October 11–November 12, 1898, Bonda, Colombia.

Later explorations fill the gaps left by previous records and make clear the principal path of migration. The birds from the Mississippi Valley pass south to the Gulf Coast. Since the species is rare on the South Atlantic coast and in the peninsula of Florida, and has probably never been taken in the West Indies, except once at Santiago, Cuba (Gundlach's records for Cuba[a] are probably incorrect), it seems evident that the summer birds of the Atlantic slope follow the general trend of the country to the southwest, and on arrival at the Gulf fly south to the damp region of southern Mexico and Central America. The species seems to avoid the Rio Grande region of Texas and, so far as the records go, all of northern Mexico and Yucatan; and it has not yet been taken in Honduras, though it may occur in the southern part of that country. Its main migration route is determined by the presence of damp, heavy forests.

678. **Geothlypis agilis** (Wils.). Connecticut Warbler.

Breeding range.—Summer records of the Connecticut warbler are rare. There is a single record of its breeding in Manitoba;[b] it was found located for the summer in a tamarack swamp near Hickory, Aitkin County, Minn.,[c] where it was seen from June 21 onward; it was seen in July on the St. Louis River in eastern Minnesota, and therefore probably breeds in that locality; and it is claimed to breed not uncommonly in southern Wisconsin.

Winter range.—There are five records of the occurrence of the Connecticut warbler south of the United States: Tonantins, Brazil,[d] April 9, 1884; Cay Sal, Bahama Islands,[e] May, 1891; New Providence, Bahamas,[f] October 12–14, 1898; Cay Lobos light, Bahamas,[g] May 9, 1901, and Bonda, Colombia,[h] October 22, 1898. Thus, although it is certain that the species winters in South America, there is as yet not a single winter record.

Spring migration.—All writers agree that during the spring migration this species is more common west of the Alleghenies than east, and that the reverse is true in the fall. In spring migration it is found west of the Mississippi River at St. Louis and to the Red River of Minnesota. It is not known from Nebraska, Kansas, or Louisiana, but there is one record of its accidental occurrence in Colorado. It would seem that the principal line of spring migration is from South America to the Bahamas and undoubtedly to Cuba, though the species is not yet reported from that island.

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[a] Gundlach, J. f. Orn., p. 417, 1872.

[b] Seton, Auk, I, p. 192, 1884.

[c] Gault, Auk, XIV, p. 222, 1897.

[d] Berlepsch, J. f. Orn., p. 98, 1889.

[e] Cory, Auk, VIII, p. 352, 1891.

[f] Bonhote, Ibis, p. 510, 1899.

[g] Bonhote, Auk, XX, p. 172, 1903.

[h] Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 177, 1900; Auk, XVII, 366, 1900.

The full record of the Connecticut warbler at the Sombrero Key lighthouse in southern Florida is:

Record of Connecticut warbler at Sombrero Key lighthouse.

Date.	Number of birds striking.	Number of birds killed.	Time of day.	Weather conditions.
Oct. 9, 1885	4	1	8 p. m.–2 a. m	NE.-E., storm and rain.
May 19, 1887	6	1	10 p. m.–5 a. m	Moderate east wind and heavy rain.
May 4, 1888	1	1	1–2 a. m	Fresh ESE. wind, cloudy.
May 8, 1888	1	1	12–2 a. m	Fresh SE. wind with much rain.
May 12, 1888	2	1	10 p. m.–3 a. m	Calm and clear.

In 1893 the first spring migrants of this species were seen on the lower Suwanee River[a] May 10 and 11, and at South Anclote Key[b] May 24, 1887. The next record to the north is in Chester County, S. C., May 10, 1889. The bird was seen at St. Louis May 14, 1883; May 21, 1884, and May 15 and 22, 1885. Records are more common in Indiana and Illinois, and are usually made about the middle of May, the earliest date being May 4, 1891, at English Lake, Ind. The species has been taken many times in spring in Michigan and Wisconsin, and it can hardly be called uncommon in Minnesota from the Red River on the west to the St. Louis River on the east.

Fall migration.—The Connecticut warbler is not known in Canada east of Ontario, nor in New England north of Massachusetts, except for a few specimens taken at Pittsford, Vt., September 20, 1888;[c] Shelburne, N. H., September 14, and Saco, Me., September 8–15. From its breeding grounds in Manitoba and Ontario it seems to pass south and southeast to the region of the Great Lakes and to the Atlantic in Massachusetts. It has been taken at Chicago and in southern Michigan August 30; Ossining, N. Y., August 26, and at Washington, D. C., August 28. Most of the records of its occurrence in the eastern United States are made in September. Considering the small numbers observed, it strikes the lighthouses with much frequency. It has been reported as striking at Spectacle Reef lighthouse near the Straits of Mackinac. It struck one of the exposition buildings at Milwaukee[d] September 22–23, 1888. Sixteen were killed on the night of September 30, 1883, at Fire Island light,[e] and three at Shinnecock light, both on the south coast of Long Island, and eighteen were killed on the night of October 12, 1883, at Fire Island light. These records show what numbers of the bird must pass in the fall through New England.

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[a] Wayne, Auk, X, p. 338, 1893.

[b] Scott, Auk, V, p. 187, 1888.

[c] Hitchcock, Auk, VI, p. 193, 1889.

[d] Kumlein, Auk, V, p. 326, 1888.

[e] Dutcher, Auk, I, p. 179, 1884.

The Connecticut warbler has been seen at Chicago as late as September 17, 1894; Portland, Conn., October 1, 1894; Englewood, N. J., October 11, 1885; Washington, October 12, 1890; Raleigh, N. C., October 14, 1884, October 15 and 24, 1896, October 13, 1898; Sombrero Key, Fla., October 9, 1885; New Providence Island, Bahamas, October 12, 1898 (when several that remained only four or five days were noted), and Bonda, Colombia, October 22, 1898.

679. **Geothlypis philadelphia** (Wils.). Mourning Warbler.

Breeding range.—The mourning warbler is most common in summer in northern Minnesota and the valley of the Red River of the North in North Dakota and Manitoba. It occurs rarely in eastern Assiniboia. It is found breeding, but is less common in Michigan, central Ontario, northern New York, Vermont, and New Hampshire, and in the Catskills and the mountains of Berkshire County, Mass.; also in Maine, where it seems to be quite common locally in the north eastern part, and east to New Brunswick, Prince Edward Island, and Nova Scotia. It also breeds in some of the mountains of Pennsylvania and West Virginia.

Migration range.—With the exception of a probably accidental occurrence in South Carolina, it has not been recorded outside the mountains at any time of the year in the Atlantic and Gulf States, from North Carolina to Mississippi. It is a rare migrant in Louisiana, but is fairly common in migration in Texas. Its distribution in the United States is therefore fan-shaped. Touching the Gulf of Mexico along the coast of Louisiana and Texas, a distance of 600 miles, the lines of migration extend north to Manitoba and northeast along the west side of the Alleghenies to New Brunswick, Nova Scotia, and the Magdalen Islands. The east and west extension of the breeding ground is nearly 2,000 miles.

Winter range.—The distribution of the mourning warbler in winter is rather less extended than in summer. A single specimen taken on the southeast coast of Nicaragua,[a] February 4, 1892, constitutes the only record for this country. The bird is a not uncommon winter resident in Costa Rica, Panama, and Colombia, and there are a few records of its occurrence in Ecuador. Since the summer home of the species is principally in the Canadian zone, with but few individuals nesting in the Alleghenian, one would naturally expect it to seek the mountains in winter; and it is interesting to note that all the winter records were made at the higher altitudes. In Costa Rica[a] it was taken at San José (3,500 feet), and in Colombia at Sta. Elena[b] (above 6,000 feet), Medellin[b] (5,000 feet), Ocana[c] (3,700 feet), La Concepcion[d] (3,000 feet), and Chirua[d] (7,000 feet). Four males and one female were taken in January in Mapoto,[e] central Ecuador, on the east slope of the Andes, at 7,000 feet. One specimen was taken at Papallacta[f] (11,500 feet), southeast of Quito.

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[a] Richmond, Proc. U. S. Nat. Mus., XVI, p. 484, 1893.

Spring migration.—The records all point to Texas as the region where the species enters the United States and from which it departs. Dresser says: "Early in May I shot five in the long weeds growing in the Medina River bottom. They were abundant, but shy and difficult to get near." Sennett saw "several to many" on the lower Rio Grande; Nehrling considers the species a rather rare migrant near Houston; Merrill and Butcher took specimens in September on the lower Rio Grande, and Lloyd calls the bird a tolerably common fall migrant in southern Texas.

It seems probable that the line of migration of the species is from the highlands of Costa Rica northwestward along the mountains of Honduras and Guatemala and then across the Gulf of Campeche to northern Mexico and eastern Texas. Although along this whole distance from Costa Rica to the Rio Grande but one occurrence has been recorded, that of a specimen taken in the spring of 1901 in Vera Cruz, Mexico, by Colburn, it is to be remembered that practically no collecting has been done during the spring and fall migrations in the higher sections along this route. It is not to be supposed that the birds cover this long distance at a single flight. Cherrie says that the bulk leave San José, Costa Rica, by the 1st of April, and he notes that the last seen in spring passed on April 24, 1889, and April 27, 1890. But the earliest date of arrival in Texas is April 24, 1890, at San Antonio. This leaves nearly a month unaccounted for between Costa Rica and Texas. It is probable that the species actually does occur in the mountains between Texas and Costa Rica, but that up to the present time it has been overlooked.

The mourning warbler is one of the latest migrants to reach the United States. It lingers long in its winter home, specimens having been taken in Colombia, South America, as late as March 25, 1899; in Panama, March 17 and April 7, 1901, and, as already noted, in Costa Rica, April 27. The complete records of observation in Texas are:

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[a] Cherrie, Auk, VII, p. 336, 1890; IX, p. 22, 1892.

[b] Sclater and Salvin, P. Z. S., p. 494, 1879.

[c] Wyatt, Ibis, p. 322, 1871.

[d] Bangs, Proc. Biol. Soc. Wash., XIII, p. 105, 1899; Allen, Bul. Am. Mus. Nat. Hist. XIII, 176, 1900; Auk, XVII, 366, 1900.

[e] Taczanowski and Berlepsch, P. Z. S., p. 74, 1885.

[f] Goodfellow, Ibis, p. 314, 1901.

Lower Rio Grande, May 9–13, 1878; Victoria County, May 3–4, 1887; San Antonio, April 28, 1885, April 24, 1890, May 15, 1890, May 12–13, 1891; Houston, May 16, 1882; Austin, May 19, 1890; Dallas, May 3–18, 1898, May 3–7, 1899; Bonham, May 14, 1885; Gainesville, May 22, 1885, May 6–13, 1889. Farther north the records are: Emporia, Kans., May 15, 1885; western Missouri, May 12–18, 1874; St. Louis, May 19, 1882, May 16, 1883, May 21, 1884, May 13–22, 1885, May 10, 1886, May 14, 1887; Rising Fawn, Ga., May 14–20, 1885; Washington, May 15–30; eastern Pennsylvania, May 6–25; Scarboro, N. Y., May 9, 1897; St. Johnsbury, Vt., May 20, 1900; St. John, New Brunswick, May 24, 1891, and North River, Prince Edward Island, June 10, 1888. Southern Michigan is reached May 17; Listowel, Ontario, May 17; the Parry Sound District, Ontario, May 22, and Ottawa, May 24. An early arrival was noted at Brookville, Ind., May 7, 1881. The first appear on the average at Chicago May 18, and on the same date at Lanesboro, Minn. An individual was seen May 18, 1885, at White Earth, Minn., and another May 23, 1900, at Aweme, Manitoba. Thus, generally speaking, a little less than four weeks is occupied in the journey from Texas to Minnesota, which gives an average daily travel of 45 miles. This high rate of speed is particularly to be noted, both because the species is a late migrant and because the birds are passing over a section of country in which none of them breed. The same rate of speed in the South would just about fill the time between the Costa Rican and Texan dates of arrival.

The records show a comparatively short time spent in any one place during migration. The dates of recorded arrivals in Texas do not extend over quite a month, from the earliest at San Antonio, April 24, 1890, to the latest at Gainesville, May 22, 1885; and the records for any one year do not cover more than three weeks. The great bulk of the birds occupy scarcely two weeks in passing a given place in the central Mississippi Valley.

Fall migration.—Notes on fall migration are almost lacking. The last mourning warbler was noted at Ottawa August 28, 1896; North River, Prince Edward Island, September 3, 1890; Renovo, Pa., September 26, 1899; Cambridge, Mass., September 30, and Ossining, N. Y., October 1. Lloyd reports that mourning warblers had left central Texas by the 1st of September, at which time Cherrie records their arrival in Costa Rica, where he says they are not uncommon by the middle of the month. A belated bird was seen at New Orleans October 7, 1896.

680. **Geothlypis tolmiei** (Towns.). Macgillivray Warbler.

The Macgillivray warbler is one of the common and characteristic species of the western United States, and one of the few of that region that proceed as far southeast as South America. It breeds from New Mexico and Arizona to British Columbia, and occurs east regularly to the foothills of the Rockies, and occasionally many miles out on the plains. In the mountains it breeds to 9,000 feet. It winters from Lower California to Colombia,[a] South America, and is most common along the main range of the mountains.

Spring migration.—The earliest migrants of the Macgillivray warbler seen in the Huachuca Mountains, Arizona, were recorded April 11, 1902. In southern California a few have been seen as early as the last of March, but the general time of arrival in the southern part of the State is the first ten days of April. Farther advance northward is remarkably slow. The average date of arrival in northern Colorado is May 13; at Cheyenne, Wyo., May 14, and at Great Falls, Mont., May 28. Some records of the first noted are: Fort Klamath, Oreg., May 11, 1887; Beaverton, Oreg., May 18, 1885; Columbia Falls, Mont., May 19, 1885; Chelan, Wash., May 21, 1896; Burrard Inlet, British Columbia, June 2, 1885, and Chilliwack, British Columbia, June 8, 1888.

681. **Geothlypis trichas** (Linn.). Maryland Yellow-throat.

Breeding range.—There are three forms of the Maryland yellow-throat on the Atlantic coast, of which *trichas* is the intermediate, breeding from Georgia to Maryland and less commonly to Delaware, southern Pennsylvania, and southern New Jersey. The range northward is occupied by *brachidactyla*, and southward in Florida and along the Gulf coast by *ignota*. In the southern part of its range *trichas* is the form found on the higher lands to the base of the mountains, while the coastal plain and the swamps are occupied by *ignota*.

Winter range.—The typical form *trichas* passes in winter but little south of its breeding range, occupying at this season the Carolinas, Georgia, Florida, and the northern Bahamas. Occasionally one is seen in winter much farther north along the coast. The migrations of this form are so slight that it is not possible to separate the records of its occurrence from those of *brachidactyla*.

681b. **Geothlypis trichas ignota** Chapm. Florida Yellow-throat.

The Florida yellow-throat is an inhabitant of the Austroriparian life zone. It breeds abundantly in Florida and southern Georgia, whence it ranges in a narrow belt along the seaward edge of the coastal plain north to the Dismal Swamp of Virginia, and west to Louisiana. It is largely resident in the Gulf States, its migrations being principally restricted to a slight southward retiring of the more northern birds of the Atlantic coast, and the crossing of some of the Florida birds to Cuba. In neither of these movements can the records be separated from those of the more northern *trichas*. The subspecies breeds throughout most of its range in the Austroriparian zone, but probably not in the tropical region of Florida.

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[a] Sharpe, Cat. Birds Brit. Mus., X, p. 364, 1885.

681d. Geothlypis trichas brachidactyla (Swains.). Northern Yellow-throat.

Breeding range.—The breeding range of the northern yellow-throat occupies the whole of the Mississippi Valley from eastern Texas and eastern North Dakota to the Allegheny Mountains, and from the region above the Gulf strip to Minnesota, northern Ontario, Edmonton, Alberta, and Chippewyan, Athabasca. The known range of this form to the north was extended to the last two points by parties of the Biological Survey, which found the species in 1901 at Edmonton and in 1903 at Chippewyan. East of the Alleghenies the bird breeds from New York and northern New Jersey to southern Labrador and Newfoundland.

Winter range.—In winter the northern yellow-throat is found in the Bahamas, Cuba, and Jamaica; from Louisiana through eastern Texas; from the plateau region of Tamaulipas, Guanajuato, and Jalisco to Oaxaca and Chiapas, and from Yucatan to Guatemala, Nicaragua, and Costa Rica. It is common in the lower districts of Nicaragua.[a] This country marks its normal southern extension, however, for it is so rare in Costa Rica that Cherrie[b] saw but five individuals in three years' collecting, and apparently there are only a few other occurrences recorded.[c] A single specimen was taken at Chiriqui, Panama.[d]

Spring migration.—It is impossible to separate the notes on the migration of the three forms of the Maryland yellow-throat occurring on the Atlantic coast. The notes on which the following statements are based probably relate to all three forms. It is likely that the earliest spring migrants seen at the Florida lighthouses are *ignota*, and that the earliest in North Carolina are *trichas;* also that notes of Maryland yellow-throats in migration north of Maryland apply principally to *brachidactyla.* The lighthouse records of southern Florida include both *ignota* and *brachidactyla.* The earliest dates of striking at Sombrero Key light are March 6, 10, and 11, 1888, and March 3, 11, and 24, 1889. The flight of March 3, 1889, was one of the largest spring flights of Maryland yellow-throats ever noted at Sombrero Key. It lasted nearly all night, and during its continuance about 150 birds struck the light. On the same night Maryland yellow-throats also struck the lighthouse at Fowey Rocks on the coast of Florida 95 miles northeast of Sombrero Key, which is just south of Cape Sable. This is one of the remarkably few instances where a species struck the two lighthouses on the same night. Judging by the lighthouse records, the period of spring migration of the Maryland yellow-throat is one of the most extended. As already noted, the species is a common migrant in March; it is equally common in April, and is one of the few warblers that are common migrants in May in southern Florida. In 1888 it struck the lights at various dates from March 6 to May 20, and the next year from March 3 to May 29—the extreme dates for all years and for the Florida lighthouses. The latest of these dates is later than the time when full complements of eggs of the Maryland yellow-throat are laid in nests a thousand miles to the north. The late flights are not merely the passing of accidental laggards. The largest flight noted in spring was on May 8, 1888, when 175 birds struck Sombrero Key light and 37 dead ones were counted. On May 20, 1888, 18 birds struck, and on May 29, 1889, five were noted. These records give an idea of the great numbers of Maryland yellow-throats that cross between Florida and Cuba.

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[a] Richmond, Proc. U. S. Nat. Mus., XVI, p. 485, 1893; Nutting, ibid., VI, p. 382, 1883.

[b] Cherrie, Auk, IX, p. 21, 1892.

[c] Frantzius, J. f. Orn., p. 293, 1869; Boucard, P. Z. S., p. 52, 1878.

[d] Salvin & Godman, Biol. Cent. Amer., I, p. 150, 1881.

The dates of earliest spring arrival of Maryland yellow-throats at Raleigh, N. C., show the following remarkably even record: March 28, 1887, March 28, 1888, April 1, 1889, March 28, 1890, April 1, 1891, April 2, 1892, March 27, 1893, March 30, 1899—average March 30. Continuing north on the Atlantic slope records of average date of arrival are: Washington, April 22; Philadelphia, April 29; Englewood, N. J., May 4; southeastern New York and central Connecticut, May 5; Boston, May 7; St. Johnsbury, Vt., and southern New Hampshire, May 11; southern Maine, May 14; Quebec, May 17; St. John, New Brunswick, May 18; central Nova Scotia, May 25; southern Ontario, May 8; Ottawa, May 17.

The following table contains records of first arrivals that presumably relate to *brachidactyla*. It shows the general dates of movement in the Mississippi Valley, and also how much later the birds migrate on the plains:

Record of first arrival of northern yellow-throat.

Year.	Rodney, Miss.	Helena, Ark.	Asheville, N. C.	Eubank, Ky.	St. Louis, Mo.	Onaga, Kans.
1883					Apr. 17	
1884					Apr. 18	
1885					Apr. 20	
1886					Apr. 21	
1887	Mar. 30			Apr. 18	Apr. 14	
1888	Mar. 29				Apr. 17	
1889				Apr. 13		
1890	Mar. 25		Apr. 20	Apr. 14		
1891			Apr. 16	Apr. 15		
1892			Apr. 18	Apr. 10		
1893			Apr. 13	Apr. 22		
1894		Apr. 16	Apr. 18			Apr. 29
1895		Apr. 19				May 1
1896		Apr. 14				Apr. 23
1897						Do.
1898		Apr. 9				Apr. 27
1899		Apr. 16				
1900		Apr. 17				Apr. 28
1901		Apr. 14				May 2
Average	Mar. 28	Apr. 15	Apr. 17	Apr. 15	Apr. 18	Apr. 28

The first Maryland yellow-throats are seen on the average at Waterloo, Ind., April 25; in northern Ohio, April 30; in southern Michigan and at Chicago, May 4; Keokuk, Iowa, April 27; Grinnell, Iowa, April 30; Lanesboro, Minn., May 5; Elk River, Minn., May 12; and Aweme, Manitoba, May 22.

As might be expected from the fact that a few Maryland yellow-throats winter in Texas, the dates on which the first are seen in spring in that State are very irregular. In some cases the records of occurrence given below relate to wintering birds. The dates bring out the fact, however, that the bulk of the species moves at a little later date here than nearer the Mississippi River. The records are as follows: Lower Rio Grande, April 11, 1878; Corpus Christi, March 26–April 15, 1899; Refugio County, April 15, 1899; San Antonio, February 22 (common March 5), 1890, February 12 (common April 10), 1891; Austin, March 11 (common March 24), 1890; Fredericksburg, April 21, 1893; Dallas, April 1, 1898, April 2, 1899; Bonham, April 19, 1889, April 22, 1890, April 13, 1891; central Texas, April 4, 1885, April 12, 1894; Houston, "arrive about April 15" (Nehrling); Stillwell, Ind. T., April 7 and 10, 1897.

Fall migration.—The migration range of the Maryland yellow-throat is so filled with breeding birds that it is not possible to define with exactness the beginning of the southward movement in fall. The earliest dates of striking at the Florida lighthouses (when, of course, the birds are unquestionably migrating) are September 14, 1884, September 12, 1885, and September 18, 1887, at Sombrero Key. These records confirm Gundlach's statement that the species reaches Cuba in September. The earliest arrival noted in Jamaica was on October 8, and the earliest in eastern Nicaragua on October 28. The period of fall migration of the species is almost as extended as that of spring. The bulk of the birds leave their northern breeding grounds in September, but even far north some linger until late in the season. The last were seen at Lanesboro, Minn., October 5, 1885; Ottawa, September 27, 1889; North River, Prince Edward Island, September 11, 1887; St. John, New Brunswick, October 3, 1891; in southeastern New York, October 14, 1887; Englewood, N. J., October 18, 1885; Washington, October 20, 1890. In southern Maine and along the New England coast the last are seen October 1–14. At Raleigh, N. C., the dates of the latest fall migrants are October 11, 1886, October 9, 1889, October 11, 1890, and October 14, 1891; and at Asheville, N. C., October 26, 1891, and October 9, 1894. Only once in six years at Eubank, Ky., were any migrants seen after the 1st of October. At Sombrero Key light there were great flights on October 13, 1885, October 16–17, 1887, September 25 and October 2, 4, 8, 9, 11, 29, and 30, 1888. The heaviest flight noted in fall occurred on November 4, 1888. The latest flights were noted on November 10 and 11, 1888, and November 7, 1891. In all there are records of over 2,000 Maryland yellow-throats that have struck Sombrero Key lighthouse. The only species that has struck in larger numbers during the six years in which records have been kept is the black-throated blue warbler.

At St. Louis, after September 20, the numbers of the Maryland yellow-throats grow rapidly less, until at the end of the month only a few loiterers remain. These finally disappeared for the year on October 1, 1896, October 2, 1887, and October 4, 1895. Final departure occurred at Onaga, Kans., September 27, 1891, September 25, 1892, September 30, 1893, September 30, 1894, September 23, 1895, and September 27, 1898.

681a. **Geothlypis trichas occidentalis** Brewst. Western Yellow-throat.

Breeding range.—From the central portion of the Great Plains to the Pacific slope the western yellow-throat is one of the best-known warblers. It is a bird of the plains and lower foothills, scarcely nesting above 6,000 feet, and breeds from northern Lower California, northern Chihuahua, and western Texas to Washington, Montana, and South Dakota.

Winter range.—In winter the bird is found chiefly in western Mexico, as far south as Tepic.

Spring migration.—The influence of temperature on migration is shown strikingly in the case of the western yellow-throats. The birds arrive at just about the same time—second week in May—on the plains of north-central Colorado and at Great Falls and Columbia Falls, Mont., the latter place almost 600 miles farther north, but enjoying at this period of the year an equal degree of warmth with the Colorado plains. But almost a month earlier than this, southern British Columbia is reached by the Pacific yellow-throats that wintered in the warm valleys of California lying as far north as the plains of north-central Colorado which during the winter season can support no warbler life.

681c. **Geothlypis trichas arizela** Oberh. Pacific Yellow-throat.

This form inhabits the Pacific coast region, and breeds from British Columbia to Lower California. It winters from Tepic and Mazatlan in western Mexico, north to California.

681e. **Geothlypis trichas sinuosa** Grinnell. Salt Marsh Yellow-throat.

Occurs in the salt marshes about San Francisco Bay, where it is a permanent resident.

682. **Geothlypis beldingi** Ridgw. Belding Yellow-throat.

The Belding yellow-throat is a western species, resident in Lower California.

682.1. **Geothlypis poliocephala** Baird. Rio Grande Yellow-throat.

This Mexican species occurs near Brownsville, Tex., in the lower Rio Grande Valley.

683. Icteria virens (Linn.). Yellow-breasted Chat.

Breeding range.—The northern and western extensions of the summer range of the yellow-breasted chat closely coincide with the corresponding limits of the Carolinian life zone. The breeding range extends from southern New England through southern New York to southern Michigan, southern Wisconsin, central Iowa, southwestern Minnesota, and southern South Dakota, south through eastern Nebraska and eastern Kansas to eastern Texas, and east to the Atlantic coast, with a few scattering records from New Hampshire, southern Ontario, and other points north of the normal limits of the species. Breeding individuals from Texas show a tendency toward the western subspecies, *longicauda*, but on the coast as far south at least as the mouth of the Rio Grande they are more closely allied to the eastern than to the western form. A few miles west, at Monterey, Nuevo Leon, breeding birds approach more closely the western form. In this whole area of several hundred thousand square miles the species is common in localities suited to its habits, except in the mountains of Pennsylvania and the higher parts of the Alleghenies in Virginia, North Carolina, and Tennessee, i. e., above 3,000 feet.

Winter range.—The range of the chats in winter in Mexico and the dividing line at this season between the eastern and western forms have been quite clearly worked out by the parties of the Biological Survey. The eastern bird comes into eastern Mexico from Texas, and, passing through Tamaulipas, northeast Puebla, and northern Vera Cruz, winters abundantly along the coast and in the lower portions of Tabasco, Campeche, and Yucatan, and less commonly back from the coast to an altitude of 4,000 feet. It ranges south over the lower portions of Chiapas to the Pacific coast, and is found sparingly in eastern Oaxaca and south from Yucatan over Guatemala, chiefly in the lower portions of the country, but occasionally to 6,000 feet. The easternmost locality on the Atlantic side at which its occurrence is recorded is southeastern Nicaragua, where it has been observed to be not uncommon during the winter. In Costa Rica it is recorded as a not uncommon fall and spring migrant at San José, probably wintering in the lower lands along the Pacific coast. There are no records of its occurrence in the West Indies nor in South America.

The eastern form of the chat breeds in a district whose limits include an area of 700,000 square miles and throughout which it is quite thoroughly distributed. The outlines of its known winter range include an area of 200,000 square miles. The total limits of the breeding range of the western form include an area of 1,300,000 square miles, but so much of this is mountain and plateau, where it is known that chats do not occur, that the real breeding area is not over 400,000 square miles. The known winter home of the western form has an outside area of 120,000 square miles.

Spring migration.—The chats are late spring migrants. They have not been noted in March anywhere in the United States, except extreme southern Texas. The earliest spring arrivals noted in the eastern part of the United States were at Frogmore, S. C., and ranged from April 7, 1885, and April 9, 1889, to April 19, 1887, April 25, 1884, April 29, 1888, and May 1, 1886. The average date of arrival at Frogmore is probably about April 12. The average date of arrival of the chat in seven years' time at Kirkwood, Ga., is April 22, with variations from April 16, 1894, to April 26, 1901. At Raleigh, N. C., the average date for ten years is April 23, with extremes of April 18, 1888, and April 27, 1893. This is one of the most uniform of all the records of spring arrival of birds at Raleigh. It indicates not only slight variations in the movements of the birds, but also great care and thoroughness on the part of the observer. A few miles west of Raleigh, but still on the plains, the average date of arrival for four years is April 22. In the mountains at Asheville, at 2,000 feet altitude, the average for five years is April 25, with the slight extremes of April 21, 1891, and April 29, 1894. The average at Variety Mills, Va. (fifteen years), is April 29; Frenchcreek, W. Va., and Washington, May 1; Waynesburg, Pa., April 28; Beaver, Pa., May 2; Philadelphia, May 8; Englewood and New Providence, N. J., and in southeastern New York, May 9; in central Connecticut, May 13; in eastern Massachusetts, May 14. An extensive series of notes comes from the Mississippi Valley. The average date of arrival at St. Louis (for seven years) is April 24; at Brookville, Ind., April 29; Columbus, Ohio, May 3; Ganges, Mich., May 4; Keokuk, Iowa, May 3; Iowa City, Iowa, May 5. South of St. Louis the dates are quite early as compared with the records just given. The average for ten years at Eubank, Ky., is April 23; for four years at Helena, Ark., April 20, and for four years in the vicinity of Vicksburg, Miss., April 18. To agree with the foregoing dates the time of arrival of the chat at New Orleans should be not later than April 16, and several days earlier would be a more likely date. The recorded dates are April 22, 1893, April 20, 1895, April 13, 1899, April 23, 1901, and April 11, 1903. Professor Beyer says of the spring arrival of the chat near New Orleans: "This species never occurs within our precincts before the 15th or 18th of April and is never common until about the end of that month and sometimes not until the 1st or 2d of May." To get the full significance of these dates it is necessary to compare them with the dates of arrival of the chat in Texas and in Kansas—in other words, to compare them with the rate of progress from Mexico northward. For this reason the Texas dates are here given in full: Lower Rio Grande, March 26 (Merrill); species becomes common April 8 (Sennett); Corpus Christi, April 13, 1891, April 11, 1899; Refugio County, April 11, 1899; San Antonio, April 14, 1885, April 22, 1889, April 5, 1890, April 10, 1891; Dallas, April 20, 1898, April 21, 1899; Bonham, April 18, 1885, April 16, 1886, April 16, 1887, April 25, 1890, April 20, 1891; Gainesville, April 17, 1885, April 29, 1886, April 26, 1887. A fair average date at San Antonio is April 10 and at the Red River April 19.

A long series of observations at Onaga, Kans., directly north of Dallas, gives May 4 as the average date of arrival for eleven years. The average time of the journey from San Antonio to Onaga, a distance of 685 miles, is therefore twenty-four days, and the daily rate of speed 29 miles per day. This is quite close to the average speed along the Atlantic coast. Hence the records for the Mississippi River are evidently quite different from those to the east and to the west. They are not explainable in accordance with the commonly accepted ideas of bird migration, and are one set of a series of data that are accumulating that indicate that not all birds that cross the Gulf of Mexico cease their flight upon reaching land.

Fall migration.—Chats do not occur in Florida nor in any of the West India islands, and the numbers that pass through Texas are but a small fraction of those that are found in the eastern part of the United States. Hence the great majority must reach their winter home by a flight across the Gulf of Mexico. In the fall the chat migrates early. It deserts in August the northern limit of its range, and by the 1st of September few individuals are left north of latitude 39°. Some records of the last noted are: Englewood, N. J., August 29, 1885; Renovo, Pa., September 21, 1897; Philadelphia, September 24, 1889; Washington, September 19, 1886; Raleigh, N. C., September 1, 1888; New Orleans, September 12, 1899, and Bonham, Tex., September 20, 1889.

683a. **Icteria virens longicauda** (Lawr.). Long-tailed Chat.

Breeding range.—The long-tailed chat inhabits the western United States from the Great Plains westward, but is found principally in the lower districts, breeding to about 6,500 feet. It breeds from central Jalisco, Guanajuato, and the City of Mexico to North Dakota, southern Montana, and central British Columbia.

Winter range.—The parties of the Biological Survey in Mexico found the western form of the chat on the western coast and the higher central plateaus. They took it in Chihuahua, Durango, Jalisco, Guanajuato, Colima, Michoacan, Morelos, and western Puebla, and in Oaxaca to Cuicatlan on the Atlantic slope and Pochutla on the Pacific side.

There seems to be some question of the extension of the range of *longicauda* farther than Oaxaca. The collections of the National Museum and the Biological Survey furnish only negative evidence in this respect. The specimens taken by six different collectors in Guatemala, in both highlands and lowlands, are distintly of the eastern variety. Sumichrast's specimens from Tehuantepec are eastern, and all those taken at Chicharras on the Pacific slope of Chiapas, where the species is rather common, are unquestionably so. If, then, *longicauda* does occur in Guatemala and Honduras, as has been claimed,[a] it would appear from the above evidence that it can not be the common winter variety of this region.

The Biological Survey parties did not find *longicauda* farther north in winter than Colima and Morelos, but Colonel Grayson reports it common from October to April as far north on the coast as Mazatlan.

The summer and winter habitats of the long-tailed chat approach very closely, if they do not slightly overlap. If it be true that the bird does not winter farther southeast than Oaxaca, then the individuals that breed in central Mexico perform at the most a migration of but 500 miles, while those nesting in British Columbia have a migration route of not less than 2,000 miles in length.

Spring migration.—The long-tailed chat enters southern California about April 18, arrives in the central part of the State about April 22, and during the first week in May appears in Oregon and in northern Colorado.

684. **Wilsonia mitrata** (Gmel.). Hooded Warbler.

Breeding range.—The strongly marked colors of the hooded warbler make the species well known wherever it occurs, and consequently a great many records of its distribution exist. It is a bird of the heavy forest of the Carolinian and Austroriparian faunas, and is very abundant near the mouth of the Mississippi and common up that river to central Illinois. It is a rare breeder west of the Mississippi, but extends its range at least to southeastern Nebraska and eastern Kansas. In Texas it is not uncommon in migration along the coast, and is also found, though sparingly, inland as far as San Antonio and Waco. It is abundant from Illinois to the Atlantic coast and south to Florida; also in western and southeastern New York, some parts of southern Connecticut, and in the mountains of the Carolinas up to 3,000 feet. It is rare in southeastern Wisconsin, central Michigan, southern Ontario, and Massachusetts. In northern Florida it is a common migrant, but rare in the southern part of the State. It has been once recorded from the Bahamas.[b] There are no breeding records from Texas and Florida.

Winter range.—The northern coast of Middle America from Vera Cruz to Panama comprises the principal winter home of the hooded warbler. The center of abundance is from Yucatan and Guatemala to southeastern Nicaragua. In eastern Mexico a hooded warbler was seen at Alta Mira,[a] and another was noted at Tamaulipas November 20, 1894. The parties of the Biological Survey took a specimen at Motzorongo, Vera Cruz, in the spring of 1894 and another at Alta Mira in April, 1898. Long previous to these dates Sallé and Sumichrast recorded the bird from Cordoba and Orizaba, Vera Cruz. The species is not uncommon in winter in Yucatan, and during the spring migration is abundant both there and in Tabasco and Campeche. It occurs in winter over most of Guatemala from sea level to about 5,000 feet. Apparently the only record of its occurrence on the Pacific side of middle America is at Retalhuleu in southwestern Guatemala. It is a not uncommon winter resident of the islands off the east coast of Yucatan. It has been taken in September on the islands of Ruatan and Bonacca[b] off the coast of Honduras, on the mainland at Truxillo,[c] and in central Honduras at Comayagua (3,000 feet). From September to February it is an abundant winter resident along the coast of southeast Nicaragua,[d] and is probably more common in Costa Rica than the single record for that country would indicate. Several specimens have been taken on the Atlantic coast of Panama, but it has not been traced as yet to the mainland of South America. It is thus seen that in winter the hooded warbler is principally a bird of the heavy forests along the coast, with a few individuals penetrating to the forests of the interior nd up to an altitude of nearly 5,000 feet.

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[a] Sharpe, Cat. Birds Brit. Mus., X, p. 376, 1885.

[b] Bonhote, Auk, XX, p. 173, 1903.

Spring migration.—The main migration route of the hooded warbler in spring is from southern Mexico to Louisiana, The species arrives no earlier in Louisiana than in Florida or Texas. The average date of arrival in northern Florida is March 28; at New Orleans, March 25, and in central-eastern Texas, March 22. This is a closer agreement in time of arrival at the three localities than has been found in the case of any other migrant. Some closely agreeing Florida dates in 1885 are: Perdido Light, March 19; Pensacola, March 21, and Palatka, March 23. The extremes of arrival in Florida are March 18, 1887, and April 2, 1884; at New Orleans, March 8, 1896, and March 31, 1901; and in Texas, March 13, 1899, both at Corpus Christi and in Refugio County, and March 31, 1890, at San Antonio.

Following the Florida route northward, the first hooded warblers seen in 1885 were noted on April 5 at Savannah, Ga., and on the same date also at Rising Fawn, diagonally across the State, in the extreme northwestern part. The average date of arrival for eight years at Kirkwood, Ga., is April 10, with extremes of April 6, 1897, and April 15, 1899—the least variation in arrival of any of the species reported from this place. The first hooded warblers to arrive in 1885 at Frogmore, S. C., were seen April 10. At Walke, N. C., on the northeast coast, first arrivals were noted on April 3, 1892, and April 6, 1893. These coast records are comparatively earlier than those from the interior. A surprising fact of the spring migration of the hooded warbler is that there is no difference between the dates of arrival of the bird at Raleigh, N. C., only 300 feet above sea level, and at Asheville in the mountains, at 2,000 feet. With other species, arrival in the mountains is from six to ten days later than on the plains; but in the case of the hooded warbler the average date for the same six years' period at both points falls on the same day, April 19, with extremes of April 10, 1893, and April 23, 1892, at Raleigh, and April 12, 1893, and April 24, 1892, at Asheville. Records of arrival still farther north are: Lynchburg, Va., April 29; Washington, May 2; Englewood, N. J., and southern New York, May 4; Branchport, N. Y., May 13, and Buffalo, N. Y., May 20. A hooded warbler was noted on May 10, 1903, at Bridgeport, Conn.

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[a] Richmond, Proc. U. S. Nat. Mus., XVIII, p. 632, 1896.

[b] Salvin, Ibis, p. 253, 1888.

[c] Ridgway, Proc. U. S. Nat. Mus., X, p. 579, 1888.

[d] Richmond, Proc. U. S. Nat. Mus., XVI, p. 485, 1893.

The migration of the species up the Mississippi River gives less concordant dates. The average date of arrival at New Orleans, March 25, has already been given. The average for five years at Helena, Ark., is April 10, or sixteen days later in an advance of 300 miles. The next 300 miles to St. Louis is made in almost the same time, since the average date for five years at this place is April 24. The dates of arrival are somewhat more uniform at St. Louis than at Helena. At the former place the extremes are April 21, 1886, and April 28, 1887, while at Helena the extremes are April 3, 1898, and April 17, 1901.

There is an excellent set of notes from Eubank, Ky., for the seven years from 1889 to 1895. The average date of arrival is April 14, with extremes of April 8, 1890, and April 20, 1895. Eubank is 150 miles from Asheville, N. C., and nearly northwest, yet the average date at Eubank is five days earlier than at Asheville, which indicates that the birds reach Eubank from the southwest by way of the Mississippi Valley.

Central Indiana is reached about April 29, southern Michigan and southern Wisconsin May 13, and southeastern Iowa May 10. The migration route by way of Texas can not be traced north of the State. The few individuals that pursue this route merge into the general army along the Mississippi River.

Fall migration.—The hooded warbler is the only one of the warblers reported as striking any of the lighthouses of Florida that has not been taken at Sombrero Key. The only lighthouse records of the species for the State are of two birds that struck near St. Augustine. The facts that the hooded warbler is rare on the mainland of southern Florida and has not been taken at the three lighthouses in this part of the State and has been seen but a few times in Cuba and Jamaica, and yet is common in northern Florida and Yucatan, show plainly that the southward route of migration of the bird passes directly from

Florida and not by way of Cuba. Hooded warblers, fresh from their trip across the Gulf, were observed in numbers around Perdido Light, in northwestern Florida, March 22 and 26, 1885, and they were once seen in large numbers at sea, when they still lacked 30 miles of reaching the coast, during their migration from Central America to Louisiana. The species begins in August to migrate south. The earliest recorded date of migration in Chester County, S. C., is August 6. Southbound migrants have been noted at Key West, Fla., August 30, 1887, and August 19, 1889; at Bonacca Island, Honduras, in September; at Truxillo, Honduras, September 26, 1887, and in southeastern Nicaragua, September 24, 1892. The date of arrival in Nicaragua would allow sufficient time for the species to cross at one flight to Yucatan and then proceed leisurely south along the coast.

The bulk of the species leave the northern breeding grounds by the middle of September. The last fall migrants have been noted at Renovo, Pa., September 26, 1900, October 13, 1903; Beaver, Pa., September 25, 1890, October 3, 1891; Englewood, N. J., September 15, 1886; Washington, September 15, 1890; Frenchcreek, W. Va., September 29, 1892; Lynchburg, Va., October 10, 1899; Raleigh, N. C., October 1, 1891; Asheville, N. C., September 20, 1890; Sedan, Ind., October 5, 1893; Brookville, Ind., October 20, 1884; Eubank, Ky., September 29, 1889, and New Orleans, October 19, 1895 and 1897, October 25, 1899. The latest record for the United States is of the probably accidental occurrence of the bird at Germantown, Pa., November 19, 1887. Undoubtedly most of the migrants cross directly to the coast of southern Mexico, and only a scattering few continue down the coast of Texas. Few places along the Gulf coast from Corpus Christi southward are adapted to the needs of the bird until the heavy forests begin again at Alta Mira, Tamaulipas.

685. **Wilsonia pusilla** (Wils.). Wilson Warbler.

Breeding range.—The combined breeding and migration ranges of the eastern and western forms of the Wilson warbler cover the greater part of the North American continent. The eastern subspecies scarcely nests south of the Canadian life zone. It breeds in Nova Scotia, New Brunswick, northern Maine, northern Minnesota, Manitoba, and north to Newfoundland, Labrador, Hudson Bay, and Lake Athabasca. There are records of its breeding in the Alleghenian zone at Ottawa, Ontario,[a] and at Pittsfield, Me.[b]

Winter range.—The principal winter range of the eastern form seems to be the Atlantic slope of the mountains of Central America from Guatemala to Costa Rica, a few individuals wintering as far north as Yucatan. There is no record of the bird in South America, and only one instance of its being noted in the West Indies—an accidental occurrence on the Barbados,[a] April 30, 1873.

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[a] McIlwraith, Birds of Ontario, p. 382, 1894.

[b] Morrell, Osprey, IV, p. 5, 1899.

Spring migration.—The Wilson warbler has never been reported at any point below the hundred-foot contour on the United States coast from the Sabine River to Charleston, S. C. It is practically unknown, even as a migrant, in the entire Austroriparian zone, from the northeastern corner of Louisiana to Virginia. Just above this district it begins to be known, as at Shellmound, Miss., Rising Fawn, Ga., Chester County, S. C., and Raleigh, N. C., but it is rare east of the Alleghenies south of Washington. The principal migration route is along the mountain chain and for the most part on its western slope.

During the period of spring migration a party of the Biological Survey spent several weeks in northern and eastern Yucatan. They saw no Wilson warblers, although they covered the whole time during which the species passes from Costa Rica to the eastern United States, and the country was full of other migrating warblers. Two migration routes are open to the individuals of this species that travel between Costa Rica and the Alleghenies. They can keep on the highlands northwestward to eastern Mexico, and pass thence north to Texas and northeast to the Alleghenies—a route that would be entirely by land, and that would explain in a perfectly satisfactory manner the absence of the species from Yucatan, the coast of Honduras, the whole of the southeastern United States, and the West Indies; or they may travel from Costa Rica through Guatemala to Tabasco, and then across the Gulf of Mexico to the eastern United States. A comparison of the dates of migration will aid in deciding which of these routes is employed. Some records of the species south of the United States are as follows: Frontera, Tabasco, seen occasionally in early March, 1900; near Teapa, Tabasco, several noted early in April (one specimen April 5); Motzorongo, Vera Cruz, March 11; Jalapa (4,400 feet), Vera Cruz, March 30 and 31 and April 5, 1897; Las Vigas (8,000 feet), Vera Cruz, April 24, 1897; Tamaulipas, March 26 to May 10, 1888; Nuevo Leon, March 22, 1902. The following Texas dates of earliest spring arrivals are not numerous, but they are enough for the present purpose: Lower Rio Grande, April 26, 1878; Victoria County, April 30, 1887; San Antonio, April 30, 1889, and April 25, 1890; Austin, May 2, 1890; Dallas, May 3, 1898, and May 3, 1899. This is one of the very few sets of Texas dates representing a direct migration northward from the lower Rio Grande to northern Texas. The dates of earliest arrival to the eastward are: Shellmound, Miss., April 15, 1892; Helena, Ark., April 30, 1897; St. Louis, May 1, 1884, April 29, 1885, and May 2, 1887; Rising Fawn, Ga., May 1, 1885; Asheville, N. C., May 7, 1894; Bloomington, Ind., May 8, 1886. According to these dates the birds of the Allegheny Mountains and eastward do not come north by way of Texas. This fact, coupled with the absence of the species from the Gulf coast, seems to show that the return from the South is made by a flight across the Gulf of Mexico. This trip requires a sustained flight of at least 700 miles, but there seems to be no other assumption to explain the observed facts. Records of average dates of arrival farther north are: Washington, May 9; Englewood, N. J., May 13; Beaver, Pa., May 15; East Hartford, Conn., May 13; eastern Massachusetts and southern New Hampshire, May 17; southern New Brunswick, May 26. In southern New England the species often appears by May 10. A Wilson warbler was taken at Godbout, Quebec, June 3, 1884, and one on the Hamilton River, Quebec, May 31. West of the Alleghenies the first arrivals are noted on the average at Waterloo, Ind., May 15; southern Michigan, May 17; Ottawa, May 20; Chicago, May 14; Lanesboro, Minn., May 8; Elk River, Minn., May 14; Aweme, Manitoba, May 15; and Fort Chippewyan, Athabasca, May 26.

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[a] Salvin, Ibis, p. 334, 1873.

Fall migration.—The Wilson warbler breeds so far north that the earliest returning migrants do not appear before August in the United States. They have been noted at Lanesboro, Minn., August 23, 1887; Grinnell, Iowa, September 3, 1887; Chicago, August 16, 1896; Beaver, Pa., September 7, 1889; Englewood, N. J., August 15, 1886; and Washington, August 28, 1887. Some records of the last seen are: Aweme, Manitoba, September 10, 1901; Lanesboro, Minn., September 27, 1891; Grinnell, Iowa, September 25, 1888; Ottawa, September 29, 1890; Pictou, Nova Scotia, August 24, 1894; St. John, New Brunswick, September 17, 1896; Renovo, Pa., September 30, 1895; Germantown, Pa., October 15, 1889. The time of migration south of the United States can not be traced, because the records of the eastern and the western forms can not be separated.

685a. **Wilsonia pusilla pileolata** (Pall.). Pileolated warbler.

Breeding range.—By this subspecies in the present connection is meant the form that occurs throughout the Rocky Mountains and in the Great Basin. It breeds north into Alaska and as far south as western Texas, and possibly the higher mountains of Arizona and Mexico. It ranges casually to Minnesota and western Missouri. In Colorado it breeds commonly at timber line, ranging from 12,000 feet down to 6,000 feet.

Winter range.—The abundance of the pileolated warbler in winter in Mexico is attested by the fact that the occurrence of the bird has been noted by the parties of the Biological Survey more often than that of any three other species together. It is common from Nuevo Leon southward, and in the western part of Mexico on the highlands at least to Durango. It is there a mountain lover, common from 4,000 to 9,500 feet and ranging to 12,000 feet on the north slope of

Mount Popocatapetl and 11,000 feet on the mountains of western Guatemala. At the same time it is not uncommon on the coast itself as far north as the city of Vera Cruz and also on the Pacific coast in Chiapas, Colima, etc. The pileolated warbler follows the main chain of the mountains southeast until it is fully as far east as the birds from the eastern United States. Collections of Costa Rican birds contain typical examples of this form; one of the specimens taken by Arcé at the volcano of Chiriqui[a] in Panama, now in the National Museum, is certainly a western bird; and those taken by Brown[b] in Panama during 1901 are also undoubtedly western.

Spring migration.—The first pileolated warblers have been noted in southern Arizona April 12, 1902; at Loveland, Colo., May 11, 1889, and at Great Falls, Mont., May 23, 1892.

Fall migration.—Returning migrants have been seen at Great Falls, Mont., August 17, 1889, and at Cheyenne, Wyo., August 25, 1884. They enter Mexico so early that parties of the Biological Survey met them on August 20, 1894, in Oaxaca, and on September 4, 1893, in the Valley of Mexico. It was probably the western birds that Cherrie noted in Costa Rica as first arriving on October 27, 1889, becoming common by November 20, outnumbering all other warblers during December, and being last noted March 6, 1890. In 1902 Carriker[c] found them until April 12 in Costa Rica.

685b. **Wilsonia pusilla chryseola** Ridgw. Golden Pileolated Warbler.

Breeding range.—This is the Pacific coast form of *pusilla*, and breeds from southern California to British Columbia. Specimens have been taken east to Arizona and Fort Klamath, Oregon.

Winter range.—The winter home is in Mexico, at least as far south as Chihuahua, Sonora, and Cape St. Lucas.

Spring migration.—The birds enter the United States in southern California during the first ten days of March, are passing central California during the last week of the month, and arrive in southern British Columbia in the first week in May.

Fall migration.—Records of the beginnings of fall migration are lacking. A belated bird was noted at Chilliwack, British Columbia, November 17, 1888.

686. **Wilsonia canadensis** (Linn.). Canadian Warbler.

Breeding range.—The name of this warbler indicates its principal breeding range, which extends north to Newfoundland, southern Labrador, Hudson Bay, Cumberland House on the Saskatchewan River, Edmonton, Alberta, and Fort McMurray, Athabasca. South the Canadian warbler breeds to central Minnesota, northeastern Illinois, central Michigan, southern Ontario, central New York, eastern Massachusetts, and northwestern Connecticut, and in the Allegheny Mountains to North Carolina, where it occurs from 3,000 feet nearly to the top of the highest peaks. The species is thus confined principally during the breeding season to the Canadian zone, with scattering occurrences in the Alleghenian.

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[a] Salvin, P. Z. S., p. 183, 1870.

[b] Bangs., Proc. N. E. Zool. Club, III, 61, 1902.

[c] Specimens in Carnegie Museum, Pittsburg, Pa.

Migration range.—The great bulk of the species passes along the Atlantic coast and westward to and including the valley of the Ohio. In the interior the bird is a rare migrant from eastern Texas, eastern Kansas, eastern Nebraska, through the valley of the Red River of the North to Manitoba. Accidental occurrences are reported from central Texas, southern New Mexico, and eastern Colorado.

Winter range.—The winter home of the Canadian warbler lies a long distance from Canada. The species is found in greatest abundance in Peru,[a] especially in the northern portion, and in the neighboring regions of southern Ecuador.[b] In these sections it is found through the winter in flocks, which wander over the country on both the eastern and western slopes of the Andes. The extremes of the normal altitudes attained by the bird are 3,700 and 7,000 feet. Most of the records of its occurrence were made at an elevation of 4,000 to 5,000 feet. One specimen was secured at Quito, Ecuador,[c] at 9,500 feet altitude. The extreme southeastern point at which it has been recorded is in the mountains east of Lima, where Jelski took a male and two females on the eastern slope of the Andes at over 10,000 feet elevation. These individuals were 5,700 miles distant from Labrador by the principal route of migration followed by the species. The Canadian warbler has been taken in northern Ecuador and centra Colombia,[d] although not noted by any of the expeditions to northern Colombia, whence it may be inferred that individuals noted in Costa Rica and Panama, where the bird is not uncommon, pass southeast to Ecuador and Peru. The species has not been recorded from Nicaragua, Honduras, Yucatan, or the West Indies, nor for the last thirty years from Florida. It is not uncommon in Guatemala, and the parties of the Biological Survey took it in Chiapas, Puebla, and Tamaulipas, Mexico. In the fall it is not uncommon through these districts. For the most part it keeps in the mountainous country at 3,000–8,000 feet, but has also been taken in migration at 800 feet in Guatemala and at sea level in Panama. It has been recorded in winter in Guatemala, but most of the birds go much farther south. Even in Costa Rica Cherrie saw none in winter, though they were abundant there in fall migration.

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[a] Taczanowski, P. Z. S., p. 508, 1874; p. 223, 1879; p. 6, 1882. Orn. du Pérou, I, p. 468, 1884. Berlepsch & Stolzmann, P. Z. S., p. 332, 1896.

[b] Sclater, P. Z. S., p. 111, 1854; pp. 64 and 451, 1858. Taczanowski and Berlepsch, P. Z. S., p. 74, 1885. Goodfellow, Ibis, p. 314, 1901. Salvadori and Festa, Boll. Mus. Zool. Torino, XV, No. 351, p. 8, 1899.

[c] Sclater, Ann. & Mag. Nat. Hist., XVI, p. 281, 1855.

[d] Sclater, P. Z. S., p. 143, 1855. Salvin, Cat. Strick. Coll., p. 93, 1882. Lafresnaye, Rev. Zool., p. 292, 1843; p. 79, 1844. Sclater, Cat. Am. Birds, p. 34, 1862. Sharpe, Cat. Birds Brit. Mus., X, p. 434, 1885.

Spring migration.—The Canadian warbler is one of the late migrants. The few records of spring arrival of the species that have been gathered in the southern United States are: Southern Texas, May 2, 1877; Corpus Christi, Tex., May 4, 1900; Victoria County, Tex., April 26, 1887; San Antonio, Tex., May 4, 1884; Shellmound, Miss., April 15, 1892; Hickman, Ky., April 24, 1888; Lexington, Ky., April 29, 1899; St. Louis, May 14, 1883, May 11, 1884, May 11, 1885, May 11, 1886, May 8, 1887, April 28, 1888 (next seen May 5; bulk present from May 11 to May 19; last noted in various years May 19 to May 22); Rising Fawn, Ga., April 26, 1885; Highlands, N. C., April 29, 1886; Asheville, N. C., May 4, 1894. As the Canadian warbler passes north it has been noted on the average at Washington May 9; Beaver, Pa., May 5; Philadelphia, Englewood, N. J., and Lockport, N. Y., May 15; in eastern Massachusetts, May 14; southern New Hampshire, May 18; southern Maine, May 19; and southern New Brunswick, May 28.

Rather incongruous dates are reported from west of the Alleghenies. The average date of arrival for five years near Waterloo, Ind., is May 2, and for nine years at Listowel, Ontario, May 4, while not far distant the date of arrival at Chicago is May 15; Petersburg, Mich., May 13; Parry Sound district, Ontario, May 21, and Ottawa, May 21. The first migrant appears on the average at Lanesboro, Minn., May 19. One was seen at Aweme, Manitoba, May 20, 1899, and one at Edmonton, Alberta, May 29, 1897.

In northern Peru in 1878 a specimen was shot as late in the spring as March 28, and in central Ecuador in April, 1899, both males and females were taken. A belated migrant was taken April 28, 1893, at Chalchicomula, Puebla, Mexico, at 8,200 feet altitude. Since latitude 39° in the United States is finally passed in the last week in May by the Canadian warbler, it follows that the late spring birds of this species must make a rapid migration.

Fall migration.—The statements already made outline the probable migration route in fall of the Canadian warbler. The birds from the northeastern section of the United States appear to follow the general trend of the mountains to the Gulf Coast, being found in the fall apparently not east of Mississippi. Thence they cross the Gulf of Mexico to southern Mexico and Guatemala, reaching the Pacific coast at Tehuantepec. They probably then turn southeast and follow the mountains through Costa Rica and Panama to their principal winter home in Ecuador and Peru.

If there were only the United States records at hand, it would be impossible to get a correct idea of the date of fall migration of the Canadian warbler, chiefly because so little attention is paid in this country to July and August bird movements. Few observers think it worth while to begin making notes on southward movements of birds before September, although for a large proportion of migrants the beginning of the fall journey is several weeks earlier. A few records made of the arrival of the Canadian warbler in fall are: Lanesboro, Minn., August 18, 1889; Grinnell, Iowa, August 20, 1886; Chicago, August 15, 1896; Waterloo, Ind., August 16, 1891; Germantown, Pa., August 3, 1890; Englewood, N. J., August 7, 1886; Washington, July 31, 1887; St. Louis, August 15; Asheville, N. C., September 2, 1891; Leighton, Ala., August 18, 1891, and Bay St. Louis, Miss., September 11, 1899. Fall migration begins so early that by the last of August the birds have appeared in southern Mexico, a month later (September 29) have arrived at San José, Costa Rica,[a] and by November 27 have reached northern Peru. This gives a quite uniform rate of speed of 30 miles per day. Were it possible to suppose that any one individual traverses the entire range of the species, such a bird would either have to increase this speed or else spend the entire year on the road.

The month of September is the time of greatest abundance of the Canadian warbler in Central America. The parties of the Biological Survey noted its disappearance soon after the middle of the month from Chiapas, and nearly all the records from Guatemala were made in September. Hoffman found the species in September on the highlands of Costa Rica, and Cherrie found it most abundant on October 6 at San José, Costa Rica. Records of the last migrants seen are: Fort McMurray, Athabasca, August 10, 1903, and August 12, 1904; Grand Rapids, Athabasca, August 20, 1901; Aweme, Manitoba, August 30, 1901; Ottawa, September 5, 1890; Chicago, September 16, 1894; Waterloo, Ind., September 28, 1902; Petitcodiac, New Brunswick, August 21, 1886; Pittsfield, Me., September 12, 1897; Amherst, Mass., September 29, 1891; Englewood, N. J., October 2, 1886; Renovo, Pa. (average of six years), August 14; Germantown, Pa., October 1, 1889; Washington, September 25; St. Louis, September 22, 1885; Asheville, N. C., October 10, 1891, and October 19, 1894; Ariel, Miss., October 14, 1897, and Bay St. Louis, Miss., October 15, 1899.

687. **Setophaga ruticilla** (Linn.). Redstart.

Breeding range.—The summer range of the redstart extends over 27° of latitude, from 35° to 62°, and over 69° of longitude, from 54° to 133° in southeastern Alaska (to 123° in the United States). The species breeds north to Nova Scotia, Newfoundland, Hudson Bay, and Fort Good Hope on the Mackenzie River. In the United States it is chiefly eastern, but ranges west regularly to the Great Basin. It breeds in Utah, Idaho, British Columbia, and eastern Washington, and has occurred casually at various seasons in Arizona, Lower California, California, and Oregon. The breeding range extends south to North Carolina, Arkansas, etc. The bird breeds at Fort Union, N. Mex., and probably at Greensboro, Ala., and has been reported during the breeding season at various places south of latitude 35°, but these records are to be considered exceptional. A species that breeds in the Canadian life zone of Newfoundland and also in the southern Alleghenies would be expected to seek the higher portions of these mountains, but the redstart at the southern limit of its range nests in the lower valleys, scarcely rising to 2,000 feet.

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[a] Cherrie, Auk, VII, p. 337, 1890.

Winter range.—The winter distribution of the redstart is also very extensive, covering 25° of latitude, 23° N. to 2° S., and 38° of longitude, 60° to 98°. The species is a common spring and fall migrant in the northern Bahamas, and a few individuals may winter in some of the southern islands. It is an abundant winter resident in the Greater Antilles and has a remarkable extension in the Lesser Antilles. It is recorded from 4 of the Virgin Islands, 8 of the Leeward Islands, including Dominica,[a] and from St. Lucia,[b] St. Vincent,[c] Grenada,[d] Barbados,[e] Tobago,[f] and Trinidad.[g] Toward the east its numbers diminish, so that it is rare in the Windward Islands.

A great many redstarts pass to the mainland of South America, but their distribution appears not to be extensive. On the north coast of Colombia[h] the species is common both in migration and in winter, and penetrates the interior about to the central part of the country,[i] where it is common at 3,000–6,000 feet altitude. It has been recorded from Esmeraldas[j] on the coast; Perucho[k] at 6,300 feet on the west slope of the Andes; Quito[a] and Chimbo[b] in western Ecuador at above 9,000 feet, and at Papallacta[c] (11,500 feet) southeast of Quito on the east slope of the Andes, where it was not uncommon. The latter places, two degrees south of the equator, are the southernmost points at which it has been recorded. It has been taken once at Merida[d] (5,400 feet) and once at Caracas,[e] both in Venezuela; once at El Pilar[f] on the coast of Venezuela; twice in the Orinoco region,[g] and once on Mount Roraima[h] in British Guiana, where its eastern winter range is carried to 60° west longitude.

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[a] Verrill, Trans. Conn. Acad. VIII, p. 343, 1892.

[b] Sclater, P. Z. S., p. 14, 1876.

[c] Lawrence, Proc. U. S. Nat. Mus. I, p. 189, 1878.

[d] Wells, Proc. U. S. Nat. Mus. IX, p. 611, 1887.

[e] Feilden, Ibis, 482, 1889.

[f] Jardine, Ann. & Mag. Nat. Hist. XX, 331, 1847.

[g] Chapman, Bull. Am. Mus. Nat. Hist. VI, p. 24, 1894; Salvin, Cat. Strick. Coll., p. 95, 1882; Sclater, Cat. Am. Birds, 36, 1862; Ernst, Rev. Cient. Univ. Venez. I, p. 33, 1887.

[h] Salvin & Godman, Ibis, p. 199, 1879; ibid., p. 118, 1880. Bangs, Proc. Biol. Soc. Wash., XII, p. 144, 1898. Allen, Bull. Am. Mus. Nat. Hist., XIII, p. 176, 1900; Auk, XVII, p. 366, 1900.

[i] Wyatt, Ibis, p. 323, 1871. Sclater & Salvin, P. Z. S., p. 494, 1879. Berlepsch, J. f. Orn., p. 284, 1884. Sharpe, Cat. Birds Brit. Mus., X, 414, 1885. Sclater, P. Z. S., p. 144, 1855.

[j] Sclater, P. Z. S., p. 292, 1860.

[k] Ibid., p. 84.

To the west a redstart was taken February 24, 1883, at Miraflores,[i] Lower California. This must have been an accidental occurrence, however, for the parties of the Biological Survey have never observed the species in western Mexico, though they found it abundant through the winter in eastern Puebla, southern Vera Cruz, Tabasco, Campeche, and Yucatan. It was not seen by them in Oaxaca, Chiapas, or anywhere on the Pacific slope, though in migration it has been taken at Santa Efigenia, Oaxaca, the City of Mexico, and as far west as the city of San Luis Potosi. All the winter birds were seen below 1,000 feet altitude. In migration, however, a few range to about 7,500 feet. The low winter range may perhaps be due to the fact that the higher lands of Mexico from 1,300 feet up are occupied by several closely related resident species, for in the Rocky Mountains of Colorado the redstart breeds at heights ranging from 5,000 to 8,000 feet.

In Guatemala the American redstart has a wider altitudinal range than in Mexico, and is found throughout the country from the Pacific coast to at least 6,000 feet altitude in the interior. It is one of the few United States warblers that have been recorded in Salvador. It is a common winter resident on the east coast of Nicaragua,[j] and equally common in Costa Rica[k] to at least 1,400 feet. In Panama its range is about the same.

Spring migration.—The records of spring migration of the redstart in Florida are scattering and contradictory. It is therefore necessary to consider the North Carolina records before enough data can be obtained to determine definitely the date of arrival of the species from the South. Statesville and Raleigh, N. C., are in the same latitude and 200 miles apart. Raleigh is about 300 feet above sea level and Statesville 1,000 feet. At both places simultaneous observations were taken in April, 1885, 1887, and 1888, as follows: 1885—Raleigh, first seen 9th, next 13th, common 20th; Statesville, first seen 10th, next 12th, common 20th. 1887—Raleigh, first seen 13th, next 16th, common 18th; Statesville, first seen 10th, next 11th, common 15th. 1888—Raleigh, first seen 2d, next 3d, common 12th; Statesville, first seen 3d, next 4th, common 10th. Average—Raleigh, first seen 8th, next 11th, common 17th; Statesville, first seen 8th, next 9th, common 15th. Average for both places—first seen 8th, next 10th, common 16th. These records seem to determine quite closely the date of arrival of the redstart in North Carolina. Migration in the spring of 1888 was earlier than usual, as April 2 is the earliest date of arrival at Raleigh in fifteen years of observation. The average for these fifteen years is April 10.

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[a] Sclater, P. Z. S., p. 111, 1854; Ann. & Mag. N. H., XVI, 281, 1855.

[b] Berlepsch & Taczanowski, P. Z. S., p. 541, 1883.

[c] Goodfellow, Ibis, p. 315, 1901.

[d] Sclater & Salvin, P. Z. S., p. 780, 1870.

[e] Ernst, Flora and Fauna Venez, p. 301, 1877.

[f] Allen, Bull. Am. Mus. Nat. Hist., IV, p. 51, 1892.

[g] Berlepsch & Hartert, Novit. Zool., IX, 11, 1902.

[h] Salvin, Ibis, p. 203, 1885. Cabanis, Schomb. Reis. Guiana, III, p. 667, 1848. Quelch, Timehri, X, p. 262, 1896.

[i] Belding, Proc. U. S. Nat. Mus., VI, p. 350, 1883.

[j] Richmond, Proc. U. S. Nat. Mus., XVI, p. 485, 1893.

[k] Underwood, Ibis, p. 434, 1896.

The distance from the south end of Florida to central North Carolina is 650 miles. The apparent speed of migration of the redstart, as obtained from the records of its vernal advance in the Mississippi Valley, is 30 miles per day. Hence, if the birds which arrived in North Carolina on the dates above given landed first in Florida and then passed overland at a similar rate of speed, they must have reached the southern end of Florida, on the average, by March 20. It is well to note first that these early migrants in North Carolina do not come by way of the Bahamas. Redstarts do not winter in any of the Bahamas within 400 miles of Florida. Bryant saw none until April 18 on New Providence and Andros islands; Northrop noted none until April 10, 1890, on Andros; Cory noted the first migrant of the season on March 27, 1891, on New Providence Island, and on March 18 of the same year the naturalists of the steamer *Albatross* secured their first specimen on the same island. It is probable from these records that the van of the northward migration in North Carolina is composed of birds that have wintered in Cuba.

Few records of occurrence of the species in spring south of North Carolina accord with the average date of April 10 at Raleigh. Instead of March 20 the earliest dates of redstarts striking the light at Sombrero Key, Fla., are April 14, 1885, April 12, 1887, April 18, 1888, and April 3, 1889, and the earliest at the Tortugas is March 30, 1890. In Chester County, S. C., the earliest date of arrival in fourteen years is April 10. Other early records of arrival south of North Carolina are: Pensacola, Fla., April 5, 1885; Rising Fawn, Ga., April 10, 1885; Gainesville, Fla., April 7, 1887; Tarpon Springs, Fla., April 11, 1895, and month of Suwanee River, Fla., March 22, 1890. With these records are to be considered the dates of arrival at Savannah, Ga., April 19, 1885, and at Darien, Ga., April 28, 1890; and the average for six years near Atlanta, Ga., April 23, with extremes of April 17, 1896, and April 30, 1897.

The dates of arrival of the redstart in the Mississippi Valley show a state of affairs similar to that exhibited by the records made on the Atlantic coast—that the species is rare and late on the southern coast, early and abundant in the interior. A possible explanation is that the redstart is not a swamp dweller, and while a bird of the forest, prefers hard-wood timber, and that in its flight from Cuba, Yucatan, and southern Mexico, therefore, it does not alight as soon as it sights land, but passes on into the interior until it attains the desired feeding grounds.

Along the Atlantic slope the rate of further advance is exemplified by the following records of average date of arrival: Washington, April 23; Beaver, Pa., April 29; Renovo and Germantown, Pa., and Englewood, N. J., May 3; southeastern New York, May 4; northeastern New York, May 11; Portland, Conn., May 6; Providence, R. I., May 9; Boston, May 6; southern New Hampshire, May 12; southern Maine, May 13; Montreal, May 16; Quebec, May 14; St. John, New Brunswick, May 20; central Nova Scotia, May 25; North River, Prince Edward Island, May 27. The average date of arrival of the redstart for several years at Helena, Ark., is April 13, with extremes of April 9, 1898, and April 18, 1900. At Eubank, Ky., the average for seven years is April 16, with extremes of April 12, 1890, and April 21, 1894. At St. Louis the average for six years is April 19, with extremes of April 17, 1883, 1884, and 1888, and April 24, 1887. Helena is about 300 miles north of New Orleans, and on the basis of the usual speed of migration the redstart should reach the latter place about April 1. The species is apparently rather rare in spring at New Orleans, though common in fall. Three observers failed to see it at all in five out of eight years of observation. In each of two other years, 1898 and 1890, a single bird was seen April 8, and in 1894 one was seen on April 7, and several were noted on April 11. Farther north in the Mississippi Valley records of the average date when the first redstart appears are: Columbus, Ohio, April 26; Waterloo, Ind., April 29; Petersburg, Mich., April 30; Locke, Mich., May 7; southern Ontario, May 6; Ottawa, May 17; Chicago, May 8; southern Wisconsin, May 9; Keokuk, Iowa, May 2; Lanesboro, Minn., May 11; Elk River, Minn., May 12; Aweme, Manitoba, May 14.

The recorded dates of arrival of the species in Texas are without any regularity: Corpus Christi, March 26–April 25, 1891, April 15, 1899; Refugio County, April 15, 1899; Bee County, April 10, 1886, April 16, 1887; San Antonio, April 16, 1890, April 16, 1891; and Dallas, April 21, 1898, April 22, 1899. These records show that migration in Texas is later than in Louisiana, just as in the Mississippi Valley it is later than along the South Atlantic coast. A set of extended and excellent notes from Onaga, Kans., for eleven years, 1891–1901, indicates that the average date of arrival of the redstart at this place is May 5. Onaga is in northeastern Kansas, and the date accords well with observations made at four towns in the southeastern part of the State, where the average date of arrival is May 3. Both these dates indicate a decidedly later migration to the westward on the plains. The average date of arrival of the species at corresponding latitudes along the foothills of Colorado is about ten days later than along the Mississippi River, and much the same difference appears in Montana, where the first migrants have been seen at Terry May 16, Great Falls May 21, and Columbia Falls May 24. Hence it is fair to presume that it was not by way of Montana that the redstarts came which appeared at Osler, Saskatchewan, May 17, 1893; Fort Chippewyan, Athabasca, May 23, 1901; Fort Resolution, Mackenzie, May 23, 1860; and Fort Simpson, Mackenzie, May 20, 1860, and May 25, 1904. A redstart was seen on June 8, 1889, at Chilliwack, British Columbia.

The redstart is one of the latest warblers to leave its winter home. It was taken on March 30, 1899, at Valparaiso, Colombia; on March 6, 1889, at San José, Costa Rica, and March 13, 1864, elsewhere in that country, and in May on the island of Cozumel. One was seen in May in Tabasco, Mexico, and another in April in Oaxaca. In 1900, as late as the middle of June, a redstart came aboard a vessel in the Bay of Campeche.

Fall migration.—The redstart is one of the earliest fall migrants to reach Cuba. Whenever birds strike in the early fall at the Florida lighthouses, this species is almost sure to be among them. The redstart breeds over so much of the eastern United States that the beginning of its southward movement is somewhat difficult to note. It is safe to say, however, that migration begins in July and is well under way by the latter part of the month. Consequently the finding of both male and female redstarts in a given locality in the middle of July does not make it safe to assume that they nested there. In Chester County, S. C., just south of the breeding range in the Alleghenies, the earliest southbound migrant of the year was seen on July 10, though of course migrants are not common in July. The earliest dates of the arrival of fall migrants at New Orleans are July 21, 1899, July 29, 1900, and July 30, 1897. At Key West, Fla., where the species certainly does not breed, it was seen July 22, 1889; and near there, at Sombrero Key lighthouse, the earliest dates of striking the light are July 28 and 29, 1886. The regular tide of migration sets in early in August, and the species has struck the Florida lighthouses on nineteen different nights of this month.

The redstart has been taken in Jamaica by August 10; on the Pacific slope of Costa Rica at San José,[a] August 13, 1889; on the north shore of Colombia, September 2, 1898, and on the island of Antigua September 6. All the way from its summer to its winter home, therefore, the redstart is among the earliest migrants.

Migration is early along the western limit of the range of the species, but not so extraordinarily early as in the east. The migrants reach central Texas by the last of August, and have been noted near the southern limit of their range at San Luis Potosi, Mexico, by the 1st of September.

For a bird that winters abundantly in Cuba the redstart closes its migration rather early. It is seldom seen in New England after the last week in September, and the largest flocks pass through North and South Carolina about the middle of the month. Some records of the last seen are: Ottawa, September 29, 1890; Montreal, August 29, 1891; North River, Prince Edward Island, September 7, 1890; St. John, New Brunswick, September 25, 1891; eastern Massachusetts, September 24, 1896; Portland, Conn., September 26, 1890; southeastern New York, September 28, 1890; Englewood, N. J., October 3, 1886; Germantown, Pa., October 8, 1888; Washington, September 24, 1890; Frenchcreek, W. Va., September 30, 1890. The greatest number of the species strike the Florida lighthouses in the first half of October, though the greatest single flights were on September 17 and 18, 1887, when about 150 birds struck each night. The eight years' average date of the last southbound migrant seen at Raleigh, N. C., is October 9, while the latest single date is October 13, 1886 and 1891. The latest recorded date of fall migration at Asheville, N. C., is October 28, 1894; that at Tarpon Springs, Fla., November 1, and those at Sombrero Key lighthouse, October 13, 1885, October 25, 1886, October 17, 1887, and November 4, 1888. The following records of final departure west of the Alleghenies are similar in point of time: Fort McMurray, Athabasca, August 14, 1904; Great Falls, Mont., September 14, 1889; Aweme, Manitoba, September 20, 1900; Lanesboro, Minn., September 22, 1887; Grinnell, Iowa, September 28, 1885; Chicago, October 5, 1894; Waterloo, Ind., October 11, 1889; Eubank, Ky., October 7, 1891; Ariel, Miss., October 18, 1897; and New Orleans, October 27, 1899.

688. **Setophaga picta** Swains. Painted Redstart.

The painted redstart is a common resident species of the mountains of Mexico, Guatemala, and Honduras from 3,000 to 9,000 feet.

It occurs as a summer resident in southern Arizona and southern New Mexico and retreats to Mexico for the winter. It is thus resident over most of its range and is a migrant in the northern portion. The first migrant appeared in southern New Mexico March 26, 1889, and in southern Arizona March 15.

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[a] Cherrie, Auk, VII, p. 337, 1890.

[689.] **Setophaga miniata** Swains. Red-bellied Redstart.

The red-bellied redstart is a well-known resident species of Mexico and Guatemala, where it is found at an elevation of 1,500 to 8,000 feet. It is said by Giraud to have been taken in Texas, though its known range does not reach within several hundred miles of that State.

690. **Cardellina rubrifrons** (Giraud). Red-faced Warbler.

The red-faced warbler breeds in the mountains of northern Mexico, southern Arizona, and New Mexico, and winters high up in the pine forests of Mexico and Guatemala. The arrival of the first was noted April 20 in the Huachuca Mountains, Arizona.

[691.] **Ergaticus ruber** (Swains.). Red Warbler.
[692.] **Basileuterus culicivorus brasheri** (Giraud). Brasher Warbler.
[693.] **Basileuterus belli** (Giraud). Bell Warbler.

These three warblers are all resident species in the pine regions of Mexico and Guatemala. Their only standing in the list of United States birds is the statement of Giraud that he took them in Texas.

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